TEXTILE TECHNOLOGY DIGEST

VOL. 7 DECEMBER 1950 NUMBER 12

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Presents a short, rather comprehensive review of all facets of the coir industry. Starting with a description of the coconut, the methods of harvesting, husking, retting, decortication and cleaning, drying and packing of the bristle and mattress fiber are discussed. Then the fibers are described and finally the organization and industrial relations in this industry are presented. Mfr: Linafelt Ltd.

Cotton fiber treatment. Jack Compton (to The B. F. Goodrich Co.) USP 2 522 095, Sept. 12, 1950.

This invention relates to a method of treating cotton fibers whereby the tensile strength, elasticity and fatigue resistance of such fibers are remarkably increased, to the treated fibers thereby obtained, and to the improved yarns, cords and fabrics prepared from such treated fibers. The method comprises obtaining cotton fibers from unopened bolls, subjecting the individual fibers to a tension of 25 to 75% of the breaking strength of the fibers in a moist atmosphere while maintaining the natural moisture content of the fibers, and allowing the fibers to recover.

Identification of fibers. J. M. Preston. *J. Tex. Inst. 41*, P679-91 (Sept. 1950).

Cites various methods of identifying unknown fibers. These include simple burning, dimensional measurements, swelling, density, optical properties, x-ray diffraction, patterns and staining.

New use for palmetto fiber. Barend G. H. van der Jagt. USP 2 520 483, Aug. 29, 1950.

A process of producing a fibrous upholstery material, comprising the steps of boiling fibers obtained by a mechanical defibration of stems of scrub palmetto plants (*Serenoa repens*) for a period ranging from about ½ hour to about 2 and ½ hours in an aqueous caustic soda solution of between about 6° and 55° Be. strength, the strength of the solution being related to the

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boiling time according to the formula;

$$a \times b = 15 \text{ to } 30$$

where *a* is the boiling time in hours and *b* is the strength of the solution in degree Be., washing the fibers with an aqueous medium having a pH value between about 5 and 7, and drying them, a strong and tight curl developing in the fibers during the drying.

New microscopic tests for the identification of damage to wool and silk. E. Kornreich. *J. Tex. Inst. 41,* T321-28 (Aug. 1950).

Microscopic tests are described for the identification of damage to wool caused by acids, alkalis, hypochlorites and scorching. Schemes for the identification of causes of damage are suggested.

Non-hempy medullated fibers in Australian wool. W. R. Lang. *J. Tex. Inst. 41,* T309-20 (Aug. 1950).

The occurrence of non-hempy medullation in the Merino, Polwarth, Corriedate, British breeds and crossbred wools in Australia is estimated by a photoelectric medullometer and by direct count of the medullated fibers. It is concluded that in Merino the occurrence is negligible, and in Polwarth and Corriedale it is not of manufacturing significance. It is also shown that Australian grown coarse wool is not comparable with the imported types of wool as regards quantitative occurrence of medullated fibers.

Processing on the cotton system of wool/staple rayon mixture. J. Deschacht. *Rayonne 4,* 85-91 (1948).

The processing of wool/rayon fiber mixtures on the cotton system is considered under the following headings: (1) Use of very short wools; and (2) Use of combed and cut wool.

Production of improved cellulosic materials. Richard E. Reeves (to U. S. of Am.) USP 2 520 963, Sept. 5, 1950.

A process of making alcoholized modified cellulose characterized by improved resistance against attack by hot dilute aqueous alkalies, as compared with hydrocellulose of the same fluidity, and characterized by a copper number less than one, comprising: subjecting substantially dry cellulose to the action of an alcoholic solution containing an acid of the group consisting of sulfuric, hydrochloric, and para-toluene sulfonic acid, said solution containing no more than 2 percent of water, the acid concentration in the alcohol being no greater than 2-normal, the alcohol being a primary alcohol taken from the group consisting of lower primary alkanols and benzyl alcohol, the cellulose being subjected to the simultaneous action of the acid and alcohol and maintaining them in contact at least until substantially maximum fluidity of the product is attained and until an alcoholized cellulose having a copper number less than one is formed.

Specialty hair fibers — how to identify them. Arthur N. Patterson. *Rayon & Syn. Tex. 31,* 41-3 (Nov. 1950).

A review of identification methods for camel hair, alpaca, llama, cashmere, vicuna and other hair fibers.

Treatment of fibrous material. Erven White & Clayton A. Smucker (to Fiberglas Canada Ltd.) Can. P. 467 873, Sept. 5, 1950.

As an article of manufacture, a mass of mineral wool fibers bonded together into an integral bat with a binding agent distributed throughout the mass, the bonding agent comprising polymerized furfuryl alcohol and an emulsifying agent for the furfuryl alcohol.

Artificial fibers A 2

Artificial crimping of fibers. J. H. Pfau. *Am. Wool Cotton Reptr. 64,* 43-4 (Oct. 26, 1950).

A description of the textralizing process for artificially crimping fibers and its advantages is presented. The new method makes possible the alteration of certain fiber characteristics by imparting a crimp to the fibers and thus makes entirely new materials available.

Bemberg making experimental staple fiber. Anon. *J. of Commerce* (Sept. 20, 1950).

Report American Bemberg Corporation producing a new staple fiber and tow which are being evaluated in several mills.

Chemistry's contribution to the development of synthetic fibers. J. B. Quig. *Textile Age 14,* 58-9 (Oct. 1950).

In some extracts from an address before the Textile Merchants and Associates Industries convention the properties of Orlon, nylon, and Fiber V, both in continuous filament form and staple form, are reviewed.

Determination of crystallite bridging fraction in macromolecular artificial fibers. Arnulf Sippel. *Kolloid Z. 113,* 74-82 (1950).

The crystallite bridging fraction in macromolecular fibers is investigated. The theoretical method

of determining crystallite bridging fraction was tested in fibers of cellulose acetate prepared in five different ways, in polyamide fibers, and fibers of chlorinated polyvinyl chloride. The relation between tensile strength and degree of polymerization was confirmed. Some conclusion may be drawn about the invisible voids between the crystallities in the fibers and about the depth to which the bridging molecules are anchored in the crystallities.

Dynel's possibilities outlined as diversified. Anon. *Am. Wool Cotton Reptr. 64*, 9-10, 30 (Oct. 26, 1950).

The fiber characteristics and behavior of dynel and its possible uses as described in a panel discussion at a recent meeting of the AATT are reported.

Fibers with improved water insensitivity. E. I. duPont de Nemours and Co; *Textile Mfr. 76*, 104 (Sept. 1950); Brit P. 637 867.

Method of improving the water insensitivity of fibers of synthetic linear hydroxylated polymers, comprises orienting a filament of the polymer by drawing it in a medium heated to a temperature of from 200 to 250° C.; heating until the fiber shrinks from 8% to 40% until the fiber is saturated. The fiber is then treated with an insolubilizing agent, capable of entering into chemical combination with the hydroxyl groups of the polymer to render it resistant to the solvent or swelling action of hot or cold water.

How to identify synthetic fibers by their X-ray diagram. Part II. Other synthetic fibers. A. N. J. Heyn. *Rayon & Syn. Tex. 31*, 42-6 (Oct. 1950).

X-ray patterns of synthetic fibers are described, and micro-photographs are reproduced of alginate fiber, Aralac, "Soylan", Vicara, peanut fiber, Zein, Velon, Saran, various Vinyon fibers, and Orlon.

High polymers for textile fibers. R. L. Elliott. *Textile Recorder 68*, 85-7 (Oct. 1950).

A general survey of existing fiber-forming high polymers includes the sources of fibers, the types of fibers produced, the methods used to improve certain qualities of fibers such as the incorporation of protein material into modified rayons in order to improve their absorption of wool dyestuffs.

Application of dynel. Eldon Stowell. *Textile Bull. 76*, 61-2 (Oct. 1950). See front section.

Protein fibers review. J. P. Sisley. *Teintex 15*, 225-237 (1950); *in French.*

Review of some recent developments in vegetable protein fibers, and brief discussion of Lanitol and "Fiber L". The production, properties, etc. of other vegetable protein fibers are discussed, including, peanut protein fibers, soya bean protein fibers, cottonseed protein fibers and zein fibers. An extensive bibliography is given. HA

Manufacture of sheets or webs of fibrous textile materials. James H. MacGregor & Frank Happey (to Courtaulds Ltd.) USP 2 522 627, Sept. 19, 1950.

A process for the manufacture of sheets of fibrous textile material which comprises forming a layer consisting at least in part of cyanoethyl cellulose ether fibers having a nitrogen content of from about 2 to about 11 per cent on the weight of the dry, ash-free fiber, the fibers having internal elements of unetherified cellulose and rendering the cyanoethylated cellulose adhesive whereby the fibers in the layer are bonded together.

Rayon for blending with wool. Anon. *Am. Wool Cotton Reptr. 64*, 59 (Oct. 19, 1950).

In blending rayon with wool the choice of rayon should vary with the type of fabric to be produced. At one time it was considered necessary to blend fibers of closely corresponding diameter and length. However, with improvements in machinery, it has been found that other diameter fibers, and to some extent other lengths of fibers can be satisfactorily combined.

Regenerated silk project. Anon. *Daily News Record* (Oct. 17, 1950).

Dr. H. Wakeham of Textile Research Inst. Princeton, N. J. at International Silk Assoc. meeting, discusses requirements to yield satisfactory fiber from regenerated real silk. Report Japanese research workers have produced fiber with tenacity of about 2 grams per denier and 22% elongation.

Sanderit for the Textile Industry. Anon. *Textil Praxis 5*, 347 (June 1950); *in German.*

The Sander-Wuppertai Company has introduced "Sanderit", a new super polyamide monofilament, similar to nylon and perlon. Tenacity: 2 g./denier; elongation: 40%; density. 1.13; melts at 210° C.; resistant to alkalis and wear.

Synthetic fibers. Paul J. Flory (to Wingfoot Corp.) USP 2 524 045-6, Oct. 3, 1950.

Multi-chain, non-linear polyamide resins adapted to be drawn into fibers are prepared from polybasic acids having as many as six or more carboxylic acid groups (or derivatives thereof) by condensation with amino acids having one

amino and one carboxylic acid group.

Turbo crimp setter. Anon. *Am. Dyestuff Reptr. 39,* 675 (Oct. 2, 1950).

Advantages of a new crimp setter are said to be: production of 200-250 lb. of crimp-set staple per hour; a normal processing time of about 20 minutes; the ability to crimp-set nylon staple or tow, and minimum steam and labor costs. Mfr: Turbo Machine Co., Landsdale, Pa.

Vicara blends, properties. J. H. Karrh. *Rayon Syn. Tex. 31,* 36-7 (July, 1950).

Brief review of properties of fabrics made from vicara blended with cotton, rayon, wool, and nylon.

Vicara, review. Anon. *Tex. Rundshau 5,* 278-80 (July 1950); *in German.*

Brief review of Vicara, with details of constitution and properties. HA

Synthetic fibers, properties. F. H. Muller. *Kolloid Z, 113,* 166-70 (June 1949).

Describes investigation of the effect of temperature on the stress-strain properties of polyvinyl chloride, polyvinyl alcohol, polyamide, and polystyrene fibers. HA

Wool/nylon, dyeing. *Melliand Textibler 31,* 496-500 (July 1950); *in German.*

Discusses dyeing behaviour of nylon and Perlon polyamide fibers with acid dyes, and describes investigation of most suitable processes for dyeing wool/polyamide mixtures.

Yarn and films from copolymers of acrylonitrile. John R. Caldwell (to Eastman Kodak Co.) USP 2 525 521, October 10, 1950.

Yarns and films are produced from a solution in acetone or acetonitrile of copolymers of acrylonitrile and 2-methallyl alcohol.

YARN PRODUCTION B

Fiber preparation B 1

Get the most for your money by cordwood piling of cotton bales. *Modern Materials Handling 5,* 34-5 (Sept. 1950). See front section.

Pacific converter. Anon. *Daily News Record* (Sept. 7, 1950).

R. Wilkie of Pacific Mills addressing A.A.T.T. meeting in New York describes Pacific Converter now being made by Warner Swasey Co. Features low cost, high efficiency in producing top from any kind of fiber at total cost of less than 3¢

per pound, minimum of waste, better staple diagram, blending control and low maintenance cost.

Study of Detergents used in the scouring of raw wool. Van Overbeke & L. Levre. *Bull. de l'Institut de France, 21,* 60-66 (Oct. 1950).

This study shows that it is possible to classify, in laboratory, the detergent products for the scouring of raw wools, according to a test method similar to the industrial processing of these wools. Besides, this method has the advantage of detecting eventual alterations of the wool fiber due to the use of those detergents.

The Pacific converter. Robert C. Wilkie. *Textile Bull. 76,* 47-8, 50 (Oct. 1950).

The story behind the development of the Pacific converter emphasizes the economic reasons behind Pacific's first interest in the idea in 1934, the history of the machine's development, and its present advantages in tow-to-sliver production.

Carding and combing B 2

Card apron. Thomas M. Knowland & Donald R. Currier (to Boston Woven Hose & Rubber Co.) USP 2 522 277, Sept. 12, 1950.

This invention consists of a new and improved composite rub apron for use in the condensing mechanism of carding machines. It provides a rub apron of rubbery texture that may be relied upon for a long trouble-free life in service while maintaining uniformly and continuously an effective surface texture.

Dynel runs on the cotton system. R. W. Gaines & E. Stowell. *Textile J. Australia 25,* 592, 594 (Aug. 21, 1950).

See Front Section.

Modern developments in woolen carding and spinning. I. Marsden. *J. Tex. Inst. 41,* P650-59 (Aug. 1950).

Comparisons of carding and spinning equipment used in Britain and in this country are made. The advantages of certain changes incorporated in this equipment in the two countries are also cited.

Spinning nylon yarn on the worsted systems. Anon. *Textile Age 14,* 28, 31 (Oct. 1950).

Information on the processing of nylon yarn on the worsted systems, taken from the *Nylon Technical Service Bulletin,* is presented. Opening, carding, gilling, and drawing, reducing and roving, and spinning and twisting nylon staple are discussed.

Synthetic vs. metallic drawing rolls. Anon. *Textile Industries 114,* 217, 219 (Nov. 1950).

Comments in answer to a reader inquiry on the relative yarn quality made from sliver on drawing frames equipped with rolls covered with synthetic material as compared with frames equipped with metallic rolls are given. Experience of this contributor has shown that metallic rolls kept in good condition will produce better work in spinning, and a stronger, more even yarn.

The mill of today. Part 22—The drawing frame, drafting rolls. Robt. Z. Walker. *Textile Bull. 76,* 50, 52, 54, 56, 58 (Oct. 1950).

A review of the fundamentals of drafting and doubling on the drawing frame. Fiber parallelization is claimed to be a principal function of the drawing frame. Fiber control is said to be another function, in this case making possible long drafts in roving and spinning. The total draft on the frame is judged "uncritical", as long as sliver weights are held to 60 grains on the card. Roll sizes are said to have no effect upon the drafting capabilities of the frame. Tests show that a 1⅝-inch top roll on a 1½-inch bottom roll has only two teeth or flutes in contact; similarly, a 1-1/16-inch top roll and a seven-eighths-inch bottom roll had two teeth or flutes in contact at all times. The deduction: the fiber gripping power of both roll sets were the same, and the drafting action unchanged by the use of larger diameter rolls.

Uster tester discussed at Gastonia quality control meet. Anon. *Textile Industries 114,* 90-3 (Nov. 1950).

A report is given on the first meeting of the "Quality Control Group", a group of mill men interested in quality control, held at Gastonia, N.C. The Uster Evenness Tester is discussed with information presented on how a print cloth mill uses the tester, in the testing of compressed card sliver.

Drafting and roving B 3

Fiber arrangement in fibro drawframe slivers. W. E. Morton & R. J. Summers. *J. Tex. Inst. 41,* T349-60 (Sept. 1950).

Describes the behaviour of Fibro slivers, the fibers of which have been produced by a revolving flat card, when such slivers are subjected to roller drafting. Experiments are carried out in which two and four lines of rollers are used. The experimental draftings employed were 1.36, 1.92 and 1.36 x 1.92 x 3.1 = 8.1 when 8 ends were used.

Irregularities in woolen rovings. Von G. Theime.

Melliand Textilber 31, 595-6 (Sept. 1950); *in German.*

The author discloses the causes of the appearance of irregularities in the roving on web dividers in woolen yarn spinning and proposes a few measures for getting rid of them.

Roller pressure in drawing and spinning. R. S. Audley. *Fibers 11,* 358 (Oct. 1950).

The practical considerations of obtaining proper roller pressures during drawing and spinning are mentioned briefly.

Simplex frames or slubber and inter system? B. S. Yalwar. *Indian Tex. J. 60,* 810-809 (July 1950).

Machinery and labor costs for both the Simplex frame and slub inter systems are cited. The general conclusion reached is that the labor costs are about the same for both, but the machinery for the slub, inter system is somewhat cheaper.

The sickness and recovery of a textile mill. IV. Jas. Osborne. *Textile Age 14,* 69-73 (Oct. 1950).

Before any work was done on the roving department of this sheeting mill, efficiency averaged 65%, ends down per doff ran as high as 12, roving was produced that varied as much as 188% in short lengths, etc. A planned system for the roving department to correct these faults is described.

Spinning B 4

Aids to production. Anon. *Fibers 11,* 359-62 (Oct. 1950).

Describes new machinery and auxilliary equipment which aid in increasing production and maintaining more adequate control. Two new machines, one a woolen ring frame and the other a stop motion for knitting machines are described. In the auxilliary category a yarn tension meter and a yarn package density meter are mentioned.

Application in textile processes of alginate rayon. Anon. *Kunstseide und Zellwolle 27,* 425-9 (1949).

New uses for alginate rayon filaments in spinning, weaving, knitting, lace-making, dyeing and finishing are reviewed, with special reference to developments in England.

Centrifugal spinning, twisting, and analogous machine. Frank Wright (to Prince-Smith & Stells Ltd.). USP 2 520 078, Aug. 22, 1950.

In a centrifugal spinning, twisting and analogous machine including a revolving spinning contain-

er into which an annulus of material is spun, the provision of at least one guide tube directed towards the annulus of material, the tube being located approximately in tangential relation to and externally of an open end of the annulus, and a flexible hooked member adapted to be passed through the guide tube into contact with the bore of the annulus of spun material.

Conversion of spinning process from short-staple to long-staple cotton. Helpful technical suggestions for easing the cotton crisis. Orun K. Bose. *Indian Tex. J. 60,* 811-21 (July 1950).

Discusses the possibility of spinning yarn from long-staple cotton in a plant mainly meant for short-staple cotton. To properly execute the change-over the prime factors to be considered are: (1) the physical properties of the new type of cotton, which determines the treatment necessary for the best results, (2) the counts of yarn to be spun and (3) the machinery available.

Double twist spindle. Victor Marie Joseph Ancet (to Regina S. A.) USP 2 524 217, Oct. 3, 1950.

In a yarn twisting apparatus including vertical spindle mounted for rotation and having an axial passage leading inward from its free end and opening through the side of the spindle, a bearing supporting the spindle, a yarn guide fast on the spindle adjacent the inner end of the passage and extending outward from the spindle, and means for rotating the spindle, the combination of a yarn package carrier mounted on the spindle between the ends of the passage for free rotary movement relative to the spindle, means on the carrier for guiding yarn from a package on the carrier into the outer end of the passage, and elements on the carrier having extended surfaces exposed to the ambient air and acting to retard the rotation of the carrier in relation to that of the spindle.

Improved spinning machine. Narayanan. Indian P. 39 841 (through *J. Sci. Ind. Research (India).*

Imparting a slow motion to a traveller by a system of permanent magnets.

Instrument measures bobbin unbalance. Anon. *Textile World, 100,* 176 (Nov. 1950).

A new instrument called the dynamic-balance indicator is designed for mill use in the measuring of bobbins. Two spindles are provided to turn bobbins at normal speeds. Spindle-bolster vibration caused by bobbin unbalance is picked up by a coil and converted to electric current. The current, amplified by an electronic circuit, indicates the degree of bobbin unbalance on a meter. Mfr. Atwood Div., Universal Winding Co.

How Joanna reduced waste—A story of supervisor-employee cooperation. Joseph L. Delany. *Textile Industries 114,* 87-89 (Nov. 1950). See front section.

Method for sewing spinning tapes. Anon. *Textile Industries 114,* 214, 216 (Nov. 1950).

In a communication to the editor, a contributor gives a method of satisfactorily sewing spinning tapes. Details of the method are illustrated by a drawing.

Modern methods of woolen yarn manufacture. "Automatic wool oiling." William Manuel. *Indian Tex. J. 60,* 882-88 (Aug. 1950).

Discusses the various processes for manufacturing woolen yarns, with special emphasis on modern methods and equipment. First two methods of oiling are described, one being automatic and the other manual. Then, wool carding, blending and willeying, fiber lubrication, speeds and settings of various machines and yarn spinning are discussed. Also mentioned are "Peralta" rollers and their function in producing more uniformly spun yarns.

Multiple-twist type twister. Felix Planet. USP 2 521 601, Sept. 5, 1950.

A multiple-twist type of twister having a novel arrangement for preventing rotation of the package regardless of the inclination of the spindle. The mounting comprises an eccentric sleeve surrounding a portion of the spindle and driven by it. This sleeve may carry the usual flier. The package holder is mounted rotatably upon both the spindle and the sleeve and because of the eccentricity there between, the package holder cannot rotate.

New drafting system improves fiber control. Edward J. Abbott (to Abbott Machine Co.) USP 2 522 332, Sept. 12, 1950.

See Front Section.

New high-speed stop-motion ring twister. Anon. *Textile Mfr. 76,* 463-4 (Oct. 1950).

A new twister, said to produce high quality yarns and large packages on 9 in. x 4 in. bobbins, is featured by a new high speed stop motion by means of a detector at the drafting rolls and a mechanism to stop the spindle. It is described as follows: "One spindle on each side of the machine is driven by one primary tape and a secondary tape to each spindle. It is also possible by this arrangement to run the spindle in any direction

by simply reversing the cylinder. The secondary tape is required for the stop motion but the primary tape runs continuously and is not acted on by any mechanism. The quick acting stop motion is designed to give accurate results at all times. When the detector drops, the cam pushes the stop rod out of its catch and by means of a weight the connecting link lifts the vertical pulley to transfer the secondary tape from the "live" to a "dead" pulley. As the movement is being carried out, the vertical pulley is moved forward to allow free movement of the secondary tape. When the movement is completed the "dead" secondary tape is tensioned by the primary tape and being "dead" acts as the brake to bring the spindle to rest. The whole movement of stopping the spindle and raising the nip roller is completed simultaneously so that the broken end can be found behind the delivery roller, and piecing is therefore carried out easily on the single yarn. The stop motion is also arranged to operate when any breakage occurs in front of the delivery roller, or breakage of the traveller."

New slub yarn. Anon. *Textile Industries 114,* 79 (Nov. 1950).

A new slub yarn originated in Europe by a method that alters the slub during spinning so that, for the length of the slub, the yarn count is continuous according to Braschler & Cie, Zurich, Switzerland. A special gearing changes the speeds of the back and front rollers simultaneously, thereby eliminating overtwisting and undertwisting of the slubs which occur when only the speed of the back roll is changed.

Possibilities of obtaining constant cop weights in doubling room. Fritz Emmerich. *Melliand Textilber 31,* 596-8 (Sept. 1950); *in German.*

This article lays down the possibilities of obtaining constant cop weights in the doubling room under the same conditions, whereby the development of a formula for calculating the indexing wheel occupies the center of interest. With the aid of that formula a trial series is formed and ratios are gained by that means which are plotted as a graph, so that it is possible to determine the requisite number of shifts per revolution of the axle of the indexing wheel in a simple way from the running length of the doubled yarn and the weight of the cops aimed at. Constant cop weights are then assured when the time of doffing is maintained.

Processing dynel staple fiber on the cotton system. R. W. Gaines & E. Stowell. *Textile J. Australia 25,* 592, 594 (Aug. 21, 1950). See front section.

Processing on ring spinning frames of staple fiber. *Kunstseide und Zell. 27,* 437-45 (1949).

Factors important for an efficient production of staple fiber yarns on worsted ring frames is discussed, including spindle speed, number and causes of fiber breaks, atmosphereic humidity and temperature, doffing times, work load and training of operatives. Causes of faults arising in the production of rovings are considered and faults that may occur on the ring-frame are dealt with in some detail.

Structure and properties of yarns in relation to narrow fabrics. W. E. Morton. *J. Tex. Inst. 41,* (Sept. 1950).

Sketches in broad outline the essential background of a quantitative study made to investigate the structure of yarns in relation to certain physical properties of rigid webs, tapes and ribbons. Four physical properties of importance to the narrow fabric trade are discussed. These include strength, extensibility, lateral rigidity and curl.

Textile drafting apparatus. Edward J. Abbott (to Abbott Machine Co.) USP 2 522 332, Sept. 12, 1950. See front section.

The Ambler Superdrafter. Anon. *Wool Science Review* (Sept. 1950).

Details given of important physical factors which operate during drafting on which design has been based. Australian Patent Application (No. 1717/18) used as basis for this discussion.

Thread twisting device. Felix Planet. USP 2 521 601, Sept. 5, 1950.

A twisting device for threads and the like, comprising a fixed supporting frame; a rotating spindle carried by the frame, the spindle having an inner bore opening at one end thereof and a lateral passage from the bore to the exterior disposed at a distance from the open end on the portion of the spindle comprised between the frame and the open end; bearing means on the frame for the spindle; a bobbin holder loosely mounted on the spindle on the portion thereof comprised between its open end and the lateral passage; a rotatable perforated sleeve eccentrically disposed around the portion of the spindle extending from the frame to the bobbin holder; bearing means for the sleeve on the frame, the second-named bearing means being eccentrically disposed with respect to the first-named bearing means; bearing means for the sleeve on the bobbin holder in co-axial relation to the second-named bearing means; and flexible means form-

ing a transmission joint between the spindle and the sleeve.

Toho's new K. T. Spinning Frame. Direct spinning in Japan. Takeo Takagi. *Rayon & Syn. Tex. 31,* 31-2, 44 (Nov. 1950).

The Toho Rayon Co., Ltd., has installed 20 direct tow-to-yarn spinners which differ from American direct spinners in that tow breaking and drafting for spinning are done in two separate but directly joined processes. The operations are continuous, and the system is described as a double-draft-zone system, as opposed to the American single-draft-zone system. The tow being unwound from the creel package is led to breaking back rolls. Each filament of tow is broken by any desired draft between the back rolls and a pair of breaking front rolls. The sliver is then carried on a leather apron from the breaking front rolls to the regular front rolls, whence it is spun in the regular way. The gauge of the breaking zone is 2½ to 5 inches; while that of the drawing zone is about 6½ inches. Spring pressure on the breaking zone is adjustable from 200 to 500 lb. It is possible to break each filament with a minimum of stretch or draft, as a result of the breaking area having been separated from the drafting zone. Breaking draft varies from 2 to 4. It is low enough to prevent disarrangement of fibers and, as a consequence, to produce a more uniform and less neppy yarn. To spin 80s yarn from 3000-denier tow, the Toho direct spinner break drafts 2.5 times and front drafts 18 times.

Winding and spooling B 5

Apparatus for unwinding rayon cakes. Raymond Dewas. USP 2 523 502, Sept. 26, 1950.

An apparatus for rewinding rayon cakes or other yarns, the apparatus comprising in combination, a central support, a protective tissue supported upon the central support for receiving the cake to be unwound, an annular member surrounding the lower portion of the support at a distance therefrom sufficient to provide an annular space of a greater width than the base of the supported cake, the annular member projecting at its upper end above the level of the cake base, a skirt at the lower end of the protective tissue, a portion of the skirt underlying the base of the cake and forming an elastic carrier therefor, and the remainder thereof extending over the upper end of the annular member and depending therebelow, and means for holding the skirt tightly above the annular member with the skirt portion underlying the base of the cake under tension.

Heavy duty winding. Anon. *Textile Mercury & Argus 123,* 477 (Sept. 22, 1950).

The introduction to British markets of two new Foster winders is described. The model 78, in 5-spindle units, requires only about 8 by 3 feet floor space, winds a 16-in. diameter package weighing 35 lb. on a 10-in. traverse. Yarns usually handled: coarse cotton, wool, nylon, rayon tire yarns. Complete flexibility may be had, since the supply arrangement may be furnished with attachments to draw overend from bobbins, skein supply on swifts, or from an unrolling device.

The Tensiomatic spindle-driven, constant-speed winder is designed to take up yarn from a constant-speed source to a cheese or cone at a constant tension. Source of yarn may be the delivery rolls from any constant-speed textile process. The winder has a 6-in. traverse and winds up to 8 lbs. of yarn. Mfr: Foster Machine Co., Westfield, Mass.

Thread winder. Eugene Colombu (to Comptoir des Textiles Artificiels) USP 2 524 623, Oct. 3, 1950.

A thread winder comprising a pair of coaxially spaced studs, each of which is adapted to receive a spool, a separate independently pivotally mounted support for each stud whereby the spool on either stud can be disposed in and out of winding position, means to lock each support in and out of winding position, means to independently rotate each of the spools on its respective stud, a reciprocating traverse bar, a traverse guide carried by the traverse bar to guide the thread onto one of the spools, means to shift the traverse bar at a predetermined interval to dispose the traverse guide in position to guide the thread onto the other of the spools, means to guide the thread to the traverse guide comprising a first guide roll, a second guide roll carried by the traverse bar and located so that the thread leaving the second guide roll will pass in a straight vertical line to the traverse guide, an intermediate guide roll located so that the thread passing from the guide roll will pass thereto in a substantially horizontal plane and pass therefrom in a substantially horizontal plane to the second guide roll, means to reciprocate and shift the intermediate guide roll in a direction parallel to but for a distance equal to one-half of the distance of the lateral movements of the second guide roll, and a cutter to cut the loop of thread formed between the two spools when the thread is shifted from one spool to the other.

Yarn cleaner. Henry E. Griemsmann (to Bendix Aviation Corp.) USP 2 526 864, Oct. 24, 1950.

In a yarn cleaner for removing foreign material from a traveling yarn, opposed separable members at opposite sides of the yarn, at least one of which is provided with transverse scraping edges and is mounted with freedom for oscillation so as to move the edges transverse to the direction of travel of the yarn, means for yieldably urging the one of the members against the yarn, and means responsive to lateral movement of the yarn for maintaining the one member in a state of continuous oscillation.

Yarn moistening and winding apparatus. Lester Campbell (to Foster Machine Co.) USP 2 526 848 & USP 2 526 849, Oct. 24, 1950.

See Front Section.

Yarn processing — B 6

Apparatus for treating with liquid running yarns and threads. Frederick F. Sutherland & Donald K. Wilson (to Celanese Corp. of Am.) USP 2 521 807, Sept. 12, 1950.

Apparatus for the application of liquid media to running yarns and threads, comprising a vessel for containing a liquid, a rod operatively mounted with respect to the vessel, yarn guide means on the rod both inside and outside the vessel for guiding a running yarn along a controlled path through the vessel and the liquid contained therein and stripping means mounted on the rod within the vessel and in the path of the running yarn for stripping excess liquid from the wetted yarn.

Spool. Frank J. Lenox. USP 2 519 840, Aug. 22, 1950.

This invention relates to new and useful improvements in spools, reels and similar winding units, and to the method of their assembly.

Thread controlling and defect detecting device. Edouard Doll. USP 2 522 751 Sept. 19, 1950.

A slub catcher for yarn comprising in combination a pair of relatively fixed guide means for travelling yarn, means for causing deflection of the path of the yarn in accordance with variations in the diameter thereof, the means being positioned between the guide means and comprising a structure arranged at an acute angle to the normal direction of travel of the yarn and having a tapered slit through which the yarn passes the slit increasing in width in the direction of the deflection of the yarn, and yarn arresting means cooperating with the deflection means.

Yarn-guiding device. Ernest K. Bauer & Major T. Forker (to American Viscose Corp.) USP

2 517 625, August 8, 1950.

A portable device for winding tails particularly adapted to the drum winders in use at Meadville.

FABRIC PRODUCTION — C

Yarn preparation — C 1

Apparatus for radio frequency drying. Wm. N. Parker (to Radio Corp. of Am.) USP 2 521 993, Sept. 12, 1950.

Apparatus for radio frequency drying of regenerated cellulose filaments comprising a pair of electrodes which are provided with opposed parallel ridges with intervening cavities. The running yarn passes between the opposed ridges.

Automatic sizing control process shown by British. Anon. *Daily News Record 223,* 41 (Nov. 15, 1950). See front section.

Brushing yarn at the slasher. Anon. *Textile Industries 114,* 219 (Nov. 1950).

Changes in the method of brushing yarn at the slasher, described in a previous communication to the editor (see *TTD 7,* 711), to facilitate cleaning the bristles are described. The brush is moved to a point near the size box and is placed under the yarn instead of on top. A sheet metal trough fitted with a stram coil is mounted under the brush so that when filled with water the tips of the bristles dip under the surface and get wet.

French yarns in American weaving mills. Anon. *Brit. Rayon & Silk J. 27,* (Sept. 1950).

Experiments in American mills with four new French yarns are briefly outlined: Rhovyl, a polyvinyl filament, Fibravyl, its staple-fiber form, Thermovyl, a staple fiber made heat-resistant by pre-shrinkage treatment, and Isovyl, a special type of coarse wool-like fiber.

Glen Raven uses yarn-dyed orlon in awning stripe. Anon. *Natl. Canvas Goods Mfrs. Rev. 26,* 49 (Aug. 1950). See front section.

Governor for slasher winding. Joseph Alfred Carrier (to Dominion Textile Co. Ltd.) USP 2 518 417, Aug. 8, 1950.

An apparatus adapted to control the speed of a power driven slasher winder beam so as to exert a constant tension on yarn delivered from a slasher to the beam, the beam being rotatably mounted adjacent the delivery end of a slasher frame, the apparatus comprising, a friction clutch disposed between the winder beam and

power source, a fixed guide roll mounted parallel to the winder beam axis and extending across the slasher frame, a pair of bell cranks pivotally mounted on the slasher frame, one adjacent each side, a compensating roller mounted between one pair of arms of the bell cranks and extending across the frame parallel to the axis of the guide roll, counter balanced linkage means between the bell cranks and clutch, whereby yarn delivered from the slasher passes over the compensating roller and under the guide roller to the winding beam in a path substantially parallel to a plane passing through the pivotal points of the bell cranks and the axis of the compensating roller so that the angle of pull is not changed substantially by the diameter of wound on yarn of the beam and increase in tension on the yarn is adapted to actuate the compensating decrease in the winder beam speed.

Dielectric heating. R. H. Hagopian. *Rayon & Syn Tex. 31,* 33, 55 (Nov. 1950).

Applied to rayon-cake drying, the method of radio-frequency heating cut drying time from hours to minutes, reduced needed floor space to a minimum, and resulted in packages of yarn that were uniformly dry inside and out.

New thick-and-thin viscose rayon yarn. Anon. *Daily News Record* (Oct. 24, 1950).

DuPont Company introduces new novelty 150/90 yarn for use in velvets, linen-type and fur-like fabrics, etc.

Sizing. J. Bader. *Melliand Textilber 31,* 630-34 (Sept. 1950); *in German.*

The author presents a survey of present-day methods of warp and hank sizing whereby it is brought out in connection with warp sizing that the sizing agent and the drying are the two factors that exert a decisive influence on the weaving effect. Cylinder drying and air drying are compared with one another with the result that neither system can be said to be decisively superior to the other. In discussing new drying methods reference is made to a possible improvement of the size film by infra-red drying. In describing hank sizing, the author goes into the advantages and the drawbacks of linseed oil sizing. It is shown how research into the chemism of linseed oil drying found practical application in avoiding injury to rayon. A few fields of application remain reserved for linseed oil sizing until ousted by new and improved products.

Some aspects of the processing of nylon yarns and fabrics. F. Millard. *J. Tex. Inst. 41,* P643-49 (Aug. 1950).

First the general topic of yarn processing is discussed with emphasis on twisting or throwing and twist setting. Next the processing of warp and filling yarns respectively is discussed. Then in order the manufacture of special yarns, weaving, and processing of nylon fabrics are discussed.

Static Electricity in nylon processing. Anon. *Textile Industries 114,* 251 (Nov. 1950).

The accumulation of static charges in nylon yarn or fabric is affected by presence of moisture, sizes, oils, etc. These agents affect the fiber surface and the conductivity of the fiber. Humidity should be within the 55-70% r.h. range, and nylon should be conditioned before processing. Some anti-static agents are: "Ahco 11B", "Amide PES", "Amine 220" (solubilized with acetic acid), "Avitex" (a textile processing agent), "Avitone", "Glim", "Stanteosine", "Tween-20", and some of the derivatives of polyethylene glycol. The anti-static effect of these agents was largely eliminated when the treated fiber or fabric was scoured or laundered. Tests show, however, that some anti-static agents may affect other processing characteristics, and some may have harmful toxicological properties.

Treatment of filaments, foils, and similar articles. Thos. B. Frearson & Thos. Jackson (to Celanese Corp. of Am.). USP 2 520 202, Aug. 29, 1950.

In apparatus for stretching yarns in warp formation in wet steam under pressure comprising a pressure stretching chamber having inlet and outlet orifices for the yarns, each orifice being substantially of the same size and shape as the cross section of the yarn to pass through it, and having close to, but separate from, the inlet orifices for the yarns, inlets for the steam directed towards the path of the yarns near to the inlet orifices for the yarns so that the steam would normally impinge directly on the yarns, the improvement which consists in the provision of a shroud surrounding the path of the yarns in the vicinity of the yarn inlet orifices and sufficiently long to prevent the steam from impinging directly on the yarns, the shroud being interposed between the steam inlets and the path of the yarns whereby the steam impinge on the shroud, and the shroud being freely open to the pressure treatment chamber whereby the steam is present on all sides of the shroud and is in a relatively quiescent state when it initially contacts the yarns.

Viscosity is the key to good sizing of spun rayon warps. F. G. LaPiana. *Textile Mercury &*

Argus 123, 636, 639 (Oct. 20, 1950). See front section.

Weaving C 2

Axminster needle drive mechanism. Julius H. Pfau (to Alexander Smith & Sons Carpet Co.) USP 2 524 735, Oct. 3, 1950.

In an Axminster loom having a needle adapted to be reciprocated to lay double weft shots through a warp shed, drive mechanism connected to reciprocate the needle, the mechanism comprising a pivoted arm, motion multiplying means connecting the arm to actuate the needle, a continuously rotating drive member, connecting members connecting the drive member to cause reciprocating movement of the arm, and a fluid pressure cylinder having one end pivotally mounted and having a piston rod extending through the free end thereof and connected to the pivoted arm, a piston attached to the rod, and vent means in the cylinder arranged to cause the piston to oppose the movement of the pivoted arm during periods of deceleration.

Check strap for loom picker sticks. Philip G. Rhoads (to J. E. Rhoads & Sons). USP 2 520 060, Aug. 22, 1950.

A check strap for loom picker sticks comprising a single length of leatherlike material having a straight portion with substantially parallel edges, and at least one slot near the end of the length, the center line of the slot being substantially biased with respect to the center line of the straight portion.

Drop box picker. J. Edgar Moe (to The Bullard Clark Co.) USP 2 522 885, Sept. 19, 1950.

A drop box picker of the kind described comprising two oppositely positioned overlapping disconnected non-resilient elements, one of the elements adapted to slide on a rod, the other of the elements constructed to house a shuttle-engaging plug, means in the first mentioned element to cooperate with a shuttle-throwing power impulse, and synthetic plastic resilient material bonded on, about, and between the non-resilient elements to hold them in relatively spaced and overlapping and united relation, whereby shuttle strains will be transmitted from one non-resilient element to the other only thru the resilient material.

Enumeration problem in textile design. Part III. S. A. Shorter. *J. Tex. Inst. 41*, T333-48 (Sept. 1950).

Discusses the detailed enumeration of elementary design or more specifically the problem of specifying design array as distinct from determining their number. A routine is devised whereby the designs of any period may be specified in a systematic manner without omission or repetition. In addition, a routine is devised for abbreviating the results of this enumeration, in such a manner that only the primitive patterns are specified with indications of how many designs correspond to each primitive pattern, and how they are derived from it.

Filling clamping means for looms. Ivan W. Mabry. USP 2 522 290, Sept. 12, 1950.

This invention comprises means for clamping a weft or filling thread against the rear vertical plate on the shuttle box on a lay after the shuttle has passed out of the shed formed by the warp threads and into the shuttle box, at which time the lay is in its beat-up position, to thus hold the weft or filling thread taut while the weft thread is engaged by the lower free end of an improved filling fork to thus tilt the same and to thus prevent the loom from stopping. It is an object of this invention to hold the weft or filling thread taut as heretofore described, so that the conventional grid, which is normally disposed between the reed and the shuttle box, may be eliminated.

Filling motion. John Rinne & Robert G. Mallard (to The M. W. Kellogg Co.) USP 2 522 840, Sept. 19, 1950.

In a loom filling motion, the combination comprising a filling fork slide carrying a slide bearing and having a series of transfer control notches spaced therealong, and a filling motion trip supported in the bearing for slide movement along the fork slide and having a dog adapted to be moved from one notch to another as the trip is moved step by step along the fork slide by the slide movements of the fork slide resulting from the detection of the absence of filling.

First pick warp stop motion connection. Charles E. Pelletier. USP 2 521 650, Sept. 5, 1950.

In the warp stop motion connection, the combination with the crank shaft and the dobby shaft of a loom and a sprocket chain drive between the shafts, and an oscillator arm, of a crank arm on the dobby shaft and a swivel coupling on each of the crank arm and oscillator arm, and a pivotally connected link and connecting rod flexibly connecting the couplings.

Jack stick connector. William E. Lundgren (to M. W. Kellogg Co.) USP 2 522 625, Sept. 19, 1950.

A jack stick connection for a loom, comprising a pair of hooks adapted to be secured in super-

posed relationship to a bottom harness frame piece and to a jack stick respectively and presenting flat surfaces, and a link between the hooks having catching engagement therewith and having a flat surface in engagement with the flat surfaces on the hooks, whereby the link and the hooks are held against relative rotation about the longitudinal axis of the link.

Lashed-in filling reduced with improvised spring. Anon. *Textile Industries 114*, 219, 221 (Nov. 1950).

The use of a flexible piano wire spring between the top and bottom on the side of the filling clearer so as to carry the slack filling over the top and not under the filling clearer is reported to cut down about 75% of filling lashed in at the transfer on Model XD looms.

Method of warping. Henry Fiderar. USP 2 522 816, Sept. 19, 1950.

A method of producing patterned webs comprising the steps of providing threads destined to serve as warp threads with marks at regular distances, winding the differently patterned threads on different reels, arranging the threads carrying the marks in parallel and spaced from each other within the warp so that the individual marks are correlated according to a previously conceived layout, and fixing the reels on a common shaft in the desired relation to each other, and finally introducing the so prepared warp into the loom.

More comments on neps. Anon. *Textile Industries 114*, 221 (Nov. 1950).

Continuing the discussion on neps (see *TTD 7*, 702), experiences of another mill to reduce neps are discussed. Running cotton through too many machines in the opening operation and operating them too fast will curl the stock, which will result in neps formed at the cards even though they are functioning properly. The condition of the beaters on pickers has been found to be another source of excessive neps, and the uniformity of the cotton has a lot to do with neps found in the card web. Suggestions for making nep counts are also given.

Novelty effects in woven fabrics. Combining dissimilar structures. D. C. Snowden. *Brit. Rayon & Silk J. 27*, 56-7 (Sept. 1950).

Novelty floats of ends and picks on fabrics are described, showing the most commonly used weaves.

Picker and picker stick and fastener therefor. John C. Crocker (to The Bullard Clark Co.)

USP 2 522 862, Sept. 19, 1950.

A fastener for uniting a picker and picker stick comprising a rigid metallic L-shaped element having its arms extending at right angles to each other, the shorter arm being adapted to be detachably fitted in a recess in the picker stick and to be housed therein with the longer arm extending vertically in contact with the outside of the picker stick, the long arm having a bevelled wedge shaped top portion and a series of picker engaging teeth on its outer lengthwise portion, whereby the loop portion of a picker may be driven down over the fastener and the engagement with the bevel of the top and the teeth in the longer arm will hold the picker in adjusted position.

Picker stick check for looms. James W. Bridges. USP 2 521 893, Sept. 12, 1950.

A picker stick check for looms having a lay and an oscillatable picker stick associated therewith, a bracket secured on each side of the lay and extending downwardly in spaced relation to each other and on opposed sides of the path traveled by the picker stick, each of the brackets having secured to the lower end thereof a rod whose longitudinal axis of the lay and between which rods the picker stick is adapted to have oscillation, a pair of buffer members slideably mounted on the rods and against which the picker stick is adapted to strike as it approaches the ends of its oscillation, each of the rods having also slideably mounted thereon doubled pieces of material such as leather, one end of which is adapted to engage a buffer member and the other end of which is adapted to extend near the outer end of the rods and a strap member removably secured on the ends of the rods for preventing the buffer and the leather members from being pushed off the ends of the rods by the impact of a picker stick.

Picker mounting means. Coy L. Huffman. USP 2 524 443, Oct. 3, 1950.

In combination a picker stick for looms and a picker mounted on the upper end thereof, the front surface of the upper end of the picker stick having a vertically extending groove therein becoming shallower as it progresses downwardly and a screw having the same diameter throughout its length adapted to be forced downwardly in the vertically extending groove and to engage and cut female threads of gradually increasing depth as the screw is driven home in that portion of the upper end of the picker stick and to also cut threads in the walls of the groove in the picker stick to secure the picker on the picker stick.

Protection motion. Everett H. Ashton, & Elvin

A. Mastriani & Robert G. Mallard (to M. W. Kellogg Co.) USP 2 522 594, Sept. 19, 1950.

In a loom, a lay, an upright sword for the lay, and a protector mechanism near the end of the lay automatically actuated when protection is indicated to stop the lay, and arranged to transmit the thrust resulting from protective action during any instant of the protective action in a straight line in a direction extending substantially through the longitudinal center line of the sword.

Rayon warp crepe. Anon. *Am. Wool Cotton Reptr. 64,* 9-10, 41 (Nov. 9, 1950).

Not only is a warp crepe more difficult to produce than a filling-yarn crepe, but also if there is any shrinkage in a warp crepe it is in the length of the cloth. It is possible to produce a filling-yarn crepe using only one direction of yarn twist while it is not very satisfactory to use only one direction of twist in a warp crepe. Nevertheless, warp crepes are sufficiently different and have enough variety to be desirable products. A lightweight rayon viscose warp crepe is analyzed. It contains "S" and "Z" hard-twisted yarn in the warp which is of the same denier and number of filaments as the normal yarn in the filling. The use of a high warp construction, fine deniers of yarn, and a small amount of twist in the filling yarn results in fabric softness.

Reed beatup mounting for loom lays. Clarence R. Kronoff (to Crompton & Knowles Loom works) USP 2 524 670, Oct. 3, 1950.

In a loom lay, a metallic lay beam having spaced vertical front and back walls integral with a bottom plate having an extension rearward of the back wall, a race plate secured to the top of the walls, a reed behind the race plate having a rail at the bottom thereof behind the back wall, a backstay for the rail on the extension, a plurality of backstay moving members spaced along the length of the lay beam each movable toward and from the back wall with the adjacent part of the backstay, and an eccentric positioner for each member-rotatable in the extension to change the position of the associated member and corresponding part of the backstay relatively to the race plate.

Relationship between shuttle size and shed lift. Josef Schneider. *Melliand Textilber 31*A 598-604 (Sept. 1950); *in German.*

The author first gives a general survey of the basic principles of the jacquards used in weaving and then proceeds to transfer the problem of the use of large-size shuttles—which is an acute one in shaft weaving—to the jacquard. The maximum possible number of picks is determined with the aid of kinematic calculations for the various heights of the shed in the diverse jacquard systems and characterized by means of diagrams. The lift both of the shed as well as of the slay is functionally connected with the size of the shed (diameter of the shuttle), which means that production and efficiency are influenced by these factors. Critical consideration of these values leads the author to the surprising result that the output and the efficiency of the loom are totally independent of one another; by a skillful combination of kinematic calculations with the work test studies as employed by the Refa the inter-connections are brought out and made visible for the first time. The aim of the article is the formula (22), in which the machine test for a production unit (10,000 picks) is represented as a function of the variables that are met with in weaving.

Simple heddle repair method cuts loom downtime. Anon. *Textile Mercury & Argus 123,* 504, 508 (Sept. 29, 1950). See front section.

Shuttle eye block. Alexiy P. Gavriluk. USP 2 520 311, Aug. 29, 1950.

In combination in a weaving shuttle having a body provided with a bobbin chamber and a threading chamber, the latter having a floor and a window in one side wall, the latter wall of the shuttle having a longitudinally extending yarn groove in its outer surface which intersects the window, an eye block seated in the threading chamber, the block comprising parts defining a longitudinal yarn passage and a leg disposed within the window, the leg having a forward yarn-guiding surface spaced from the front wall of the window to provide a substantially vertical yarn-guiding passage, the leg having a transverse bore and a threading slot extending up into the bore, the forward wall of the slot intersecting the forward, yarn-guiding surface of the leg to form a downwardly-directed acute edge being spaced above the floor of the threading chamber sufficiently to permit yarn from the vertical yarn-guiding passage to pass rearwardly beneath the edge and into the threading slot.

So you want good cloth. Part 17—The Stafford Thread Cutting Device. Frank D. Herring. *Textile Bull. 76,* 62, 64, 66 (Oct. 1950).

A description of the Stafford thread cutter on the automatic loom, so-called because its inventor was Stafford though its manufacturer is Draper, and a complete review of the proper methods of applying and adjusting the cutter.

Warp stop mechanism. Elvin A. Mastriani (to

The M. W. Kellogg Co.) USP 2 522 629, Sept. 19, 1950.

In a loom having a lay, and swords for the lay, an electric detector device operable automatically when a warp thread breaks for creating a detecting signal, and a knock-off device, comprising a bunter carried by one of the swords, a lever supported for movement along an axis and angularly about the axis, means normally urging the lever axially into the path of movement of the bunter to cause the lever to be actuated angularly about the axis, and means responsive to the angular movement of the lever for shutting down the loom.

Knitting C 3

Weaving method and letoff. John Rinne (to The M. W. Kellogg Co.) USP 2 523 060 Sept. 19, 1950.

In a loom having a warp-beam, a rocker shaft adapted to mount a sword for operating a lay through recurrent weaving cycles, a let-off motion comprising a brake for holding the warp-beam against rotation, the brake having a brake-drum and a brake-shoe cooperating therewith and a connection between the rocker shaft and the brake-shoe for applying the brake-shoe to the brake-drum in accordance with the position of the lay during a predetermined period of each weaving cycle, to hold the warp-beam against rotation during the predetermined period.

Attachment for automatic knitting machines. Jas. P. Wilson. USP 2 523 460, Sept. 26, 1950.

A pattern or stripe knitting attachment for circular knitting machines comprising a post adapted to be detachably mounted on and rising from a knitting machine bed plate, a bracket supported by the post and extending over the bed plate, a shaft journaled in the bracket and perpendicular to the bed plate, power take-off means adapted to be driven by the drive means of the knitting machine for revolving the shaft at an rpm corresponding to that of the needle cylinder of the machine, the shaft being disposed eccentrically of and above the needle cylinder, means carried by the shaft for supplying yarn to certain of the needles of the needle cylinder for inter-knitting a stripe or pattern on an article being knitted by the machine and concurrently with the knitting operation of the machine, yarn guide means carried by the shaft above and adjacent the upper end of the needle cylinder for guiding the thread from the yarn feeding means, the yarn guide means being swingably supported relatively to the shaft for movement outwardly to projected, operative positions for rotary movement back and

forth across the path of movement of certain of the needles of the needle cylinder as the shaft is revolved whereby the yarn from the guide means, the bracket being swingable on the post for swinging the shaft and parts carried thereby upwardly and outwardly to an inoperative position relatively to the machine.

Circular knitting machine with air cleaner. Robert H. Lawson (to Scott & Williams, Inc.) USP 2 522 183, Sept. 12, 1950.

A circular knitting machine having a stationary needle cylinder, independent needles therein and one or more brushes revolving about the needle cylinder in close proximity to the needles to collect the lint, in combination with a stationary compressed air jet adapted to blow lint off the brushes when they pass the jet, and means to operate the air jet intermittently.

Fault detector for knitting machines. G. A. Hackett. Australian P. 138 574, Sept. 21, 1950.

A fault detector for use in connection with a knitting machine of the warp loom type, characterized by a member which has a smooth tip and is carried by a reciprocating member adapted to traverse the width or portion of the width of the fabric, means being provided to press the tip against the fabric and to more the tip and first-mentioned member in relation to the reciprocating member when the tip enters a gap caused by a fault in the fabric, such movement of the first-mentioned member causing an electric circuit to be completed and thus causing an audible alarm or other signal to be operated and/or the machine to be stopped.

Knitting machine. Walter Granov. USP 2 521 786, Sept. 12, 1950.

This invention relates to improvements in knitting machines and is concerned more especially with knitting machines of the V-bed type having inclined needle beds. A primary object of the invention is to provide a novel construction for selectively controlling the motion of predetermined needles in the needle beds in such a manner as to increase or diminish, as desired, the number of stitches in successive rows or courses of a knitted article without requiring interruption of the knitting operation or resetting of the machine once the initial adjustments have been made.

Knitting machine cylinder. Paul L. St. Pierre (to Hemphill Co.) USP 2 522 972, Sept. 19, 1950.

An upper cylinder for a circular, independent needle, knitting machine of the type having superposed co-axial needle cylinders and needles which includes a main cylinder portion having needle

slots of conventional depth and a relatively short extension at the bottom thereof provided with needle slots aligned with the slots of the main cylinder portion and of a depth of not more than 1/5 of the depth of the slots of the main cylinder portion.

Knitting machine needle. Roy C. Amidon (to Vanity Fair Mills, Inc.) USP 2 522 335, Sept. 12, 1590.

A knitting machine needle of the sliding tongue type, wherein is provided a longitudinally grooved needle proper having a hook: the improvement which comprises a hook closing tongue having a rigid portion to operate in the groove of the needle proper, and having a rigid base portion offset from the needle proper by a springy portion connecting the base portion with the rigid portion that operates in the groove of the needle proper.

Knitting head for knitting machines. Brooke W. Lerch (to Western Electric Co., Inc.). USP 2 520 010, Aug. 22, 1950.

A knitting head for knitting machines including a vertically positioned jack cylinder having a plurality of longitudinal slots therein, a needle jack slidably positioned in each slot of the jack cylinder, a needle cylinder secured in tandem on the upper end of the pack cylinder and having a plurality of longitudinal slots therein aligned with the slots in the jack cylinder and a knitting needle slidably positioned in each slot of the needle cylinder, the upper end of the needle jacks extending upwardly beyond the jack cylinder and converging inwardly so as to engage the lower end of their respective knitting needles, the improvement which comprises an upwardly extending ear formed on the upper end of each jack, a tubular bearing enclosing the jack cylinder so as to support the entire portions of needle jacks located below the needle cylinder when they are reciprocated to their uppermost position, and an annular bearing positioned on the needle cylinder to hold the needles in their respective slots, the bearing having a counterbore provided therein for slidably engaging the ears provided on the ends of the needle jacks and hold the ends of the needle jacks in engagement with the ends of the knitting needls during a knitting opration.

Modern knitting machinery. J. B. Lancashire. *Textile Recorder 68,* 88-90 (Oct. 1950).

The latest developments in knitting machinery are discussed, with emphasis upon those designed to give greater versatility and designing scope, and those which reduce the amount of manual operation.

Manufacture of textiles and articles fabricated therefrom. Edward J. Siegrist (to Holeproof Hos. Co.) Can. P. 46 7884, Sept. 5, 1950.

The method of manufacturing hosiery which comprises fabricating the body of a hose from one kind of textile yarn in it snatural color, thereafter sewing the edges of the body with a different kind of textile yarn in its natural color to form a longitudinal seam, thereafter dyeing the hose with different dyes, each of which dyes is particularly adapted to act on only one of the kinds of yarns, thereby to provide a hose wherein the seam has a different color from that of the body of the hose.

Means for drawing off of circularly knitted articles. Karel Semotan (to Bata) USP 2 521 258, Sept. 5, 1950.

Means for drawing off circularly knitted fabric, particularly stockings with heel and toe pockets worked in, from a circular knitting machine, such as a double-cylinder machine, where in individual articles are knitted in a continuous string, comprising: two rotatably mounted bodies with substantially conical surfaces, between which the knitted fabric passes, the bodies being so arranged that their conical surfaces can bear against one another so as to grip the fabric at one point, and means for resiliently urging the bodies into contact with one another at the said point, the bodies being furthermore so arranged that when they rotate they roll one upon the other and also undergo relative sliding motion at the said point.

Method of packaging hosiery. Edwin Yates Mauney. USP 2 521 529, Sept. 5, 1950.

That method of packaging a pair of stockings in an envelope having an open end provided with an end flap and having one side thereof transparent which comprises folding the toe portions of the stockings onto the welt portion of the stockings, then engaging the medial portion of the folded pair of stockings with one end of a suitable guide board having the medial portion of the one end cut away and folding the medial portion of the stockings on top of the board while the foot and welt portions of the stockings appear on the lower side of the board, then seizing the board and the stockings folded therearound by its other end and inserting them into the open end of the envelope, then engaging the stockings at the point where they cover the cut away portion of the board and removing the board from the package, then doubling the package transversely along a medial line and bringing the end flap of the package over and affixing it to the transparent side of the package near the bottom thereof to

thus cause the leg portion of the stockings to be visible on one side of the package and the welt portion of the stockings to be visible through the other side of the package.

New system for finishing nylon, F. F. hosiery. Anon. *Textile Age 14,* 35 (Oct. 1950).

The new Smith-Drum system for finishing all-nylon full-fashioned hosiery is reported to offer tremendous advantages over present boarding equipment. The machine consists of a traveling conveyor belt which passes through a drying cabinet with accurately controlled temperature and air currents.

Nylon extender. Anon. *Chemical & Engineering News* (Sept. 25, 1950).

Product of Blue Magic, Inc., Philadelphia, based on "Sav" a polyvinyl acetate, is said to increase hose snag resistance and also wear resistance of other textile products. Plastic cream starch marketed at 49¢ per 6½ ounce tube.

Nylon staple, yarns, manufacture. *Hos. Ind. Weekly 58,* 1, 14 (Oct. 7, 1950).

Note on two new yarns produced by Aberfoyle manufacturing Co.—a nylon staple yarn spun on the cotton system, and a nylon staple cotton blend. HA

Perlon. W. Pelz. *Kunstseide und Zellwolle 27,* 368-71 (1949); *in German.*

Discussion of the production of hosiery from Perlon fibers. Brief comparison of the physical properties of Perlon and other textile fibers is given. Results of wear tests are presented and the possibility of using Perlon for strengthening heels and toes is considered. HA

Production of fully-fashioned hose on small and large units. R. H. Dirrand, G. Wilders & A. W. Eley. *J. Tex. Inst. 41,* P660-66 (Aug. 1950).

The advantages and disadvantages of single-head and multi-head machines for hosiery production are cited. Some of the advantages of the single-head include compactness, ease of installation, greater production per head and use of inexperienced labor. The disadvantages include higher operational costs, higher mechanical upkeep costs, greater floor space and higher initial capital outlay. The advantages of the multi-head machine include low operational costs, low mechanical upkeep, lower capital outlay and less floor space. The attendant disadvantages include lower production per head, affected by temperature variation, all heads are stopped in case of breakdown and it takes a long time to train labor.

Stocking structure and method of manufacture.

Salomao J. Haddad (to Standard Hosiery Mills) USP 2 522 265, Sept. 12, 1950.

A knitted hose having at least a first and a second adjacent rectilinear area knitted in continuous circular courses of first and second respective yarns independently of each other, the yarns being interknitted in the same loops at their juncture, the first yarn being floated past the knitted area formed to the second yarn and the second yarn being floated past the knitted area formed of the first yarn to form a suture adjacent knitted areas, such suture being formed in steps, each step including a plurality of courses terminating in the same wale at one edge of an area, and the number of loops formed of each of the yarns in the courses of each step varying from step to step.

Stitch regulating mechanism. Eugene St. Pierre & Joseph Wawzonek (to Hemphill Co.) USP 2 524 578, Oct. 3, 1950.

In a circular, independent needle, knitting machine having vertically movable main and auxiliary knitting cam supports, stitch regulating mechanism which includes means associated with each cam block support for determining its operating height, a support beneath the means and held resiliently in contact therewith and means positionable beneath the last mentioned support for fixing its position.

Systems for cleaning full-fashioned knitting machines. Anon. *Textile Industries 114,* 215 (Nov. 1950).

The cleaning procedure for full-fashioned knitting machines used in a mill, having 28 "Reading" machines and 8 "Twin-Knitter" machines, is described.

A training program for loopers. Jos. D. Boyd. *Textile Age 14,* 22-7 (Oct. 1950).

A basic program for training loopers, based on an address before the Southern Hosiery Manufacturers' Assoc., is presented.

Tricot fabrics. Josef Schmachtel. *Melliand Textilber 31,* 605-6 (Sept. 1950); *in German.*

This article deals generally with tricot. Woven longitudinal tricot, transverse tricot and diagonal tricot for suitings, trouserings, ski suitings and light overcoatngs of worsted or wool with one warp and upper and backing pick, with upper and lower warp and one type of weft, with upper and lower warp and lupper and backing fiweft, with upper, lower and filling warp and one type of weft, with warp and with one warp and one type of weft by laying together two simple weaves. Warp and weft relations.

Warp-knitting machine and method of operating the same. Caros A. Hepp (to Alfred Hoffmann & Co.) USP 2 521 218, Sept. 5, 1950.

Provides an improved feed mechanism for warp knitting machines.

Warp knitting technology. D. F. Paling. *Brit. Rayon & Silk J. 27*, 58-60 (Sept. 1950).

Openwork effects in warp-knitted fabrics are obtained by means of suitable lapping movements combined with two partially threaded guide bars.

Weaving of Rhovyl yarn. Anon. *Daily News Record* (Aug. 28, 1950).

Suggest grams tension of ¼ to ⅓ of denier count, use of sized yarns as obtained for warping, avoiding use of glass and porcelain thread guides, wetting of filling yarn on pirns with non-electrifying product. Puckered effects possible in combination with other yarns due to shrinkage characteristics of the Rhovyl (Polyvinyl chloride). "Thermovyl" is fiber shrunk in staple form.

Wool/nylon dyeing. Anon. *Hos. Trade J. 57*, (681) 32 (Sept. 1950).

Brief note on method used by Wolsey Ltd. to counteract irregular streaky effect in heel and toe of nylon-reinforced socks, by folding the two yarns together before knitting; a marl-like effect is obtained instead of an irregular streakiness, and the slight difference in shade between the nylon and wool is claimed to be unnoticeable.

Yarn conditioning apparatus for knitting machines. Joseph W. Crawford (to Textile Machine Works) USP 2 522 211, Sept. 12, 1950.

In a knitting machine, yarn conditioning apparatus comprising in combination a trough containing liquid, guide means for yarn, one at each side of the trough, a longitudinal immersing guide between the two means, a longitudinal lifting member between which and the immersing guide are passed the yarns to be treated, pivot means on which the guide and lifting member are supported, and means common to the immersing guide and the lifting member for swinging them from the trough to free the trough for cleaning.

Special fabrics C 4

Adhesive bonded fibers. Lee W. Mitchell (to The Gates Rubber Co.) USP 2 522 722, Sept. 19, 1950.

A rubber belt comprising synthetic filaments which are bonded together in abutting relationship in a particular manner by a rubber-like agglutinant before incorporation in the belt.

Ballon envelop fabric. Rene Leboime & Henri Jacqueau (to Attorney General of the U. S.). USP 2 523 312, Sept. 26, 1950.

A balloon envelop fabric impermeable to gases and possessing the properties of flexibility and fire-resistance which comprises an outer layer of flexible woven mineral fabric, an inner layer of a flexible woven organic textile fabric and a coating of plastic material on the second mentioned layer to make it impervious to gases, the second mentioned layer being united to and in contact with the first mentioned layer over the whole of the contiguous surfaces of these 2 layers.

Elastic coated fabric. Anon. *Daily News Record*, 35, (Oct. 11, 1950).

Vinyl-coated elastic fabric in which both the fabric and the coating stretch and spring back into shape is being offered for upholstery uses by the U. S. Rubber Co. The vinyl itself is declared to be of a new type which will stretch in every direction. In addition, it is declared to provide a high-slip finish. It is being marketed under the name of Elastic Naugahyde.

Epoxy resins in glass-cloth laminates. I. Silver & H. B. Atkinson. *Modern Plastics 28*, 113-122, (Nov. 1950).

New resin formulations involving epoxy resins have been developed for use in the lamination of glass cloth. Experimental formulations have resulted in laminates with exceptional physical properties. These include high flexural strength, high flexural modulus, excellent tensile and compressive properties, and very good dielectric properties. Moisture absorption and hardness properties are in the same order as for the polyester laminates.

Fabric. Alfred L. Helwith. USP 2 522 225, Sept. 12, 1950.

A textile fabric having interwoven warp and weft yarns with the former more closely spaced than the latter, the weft consisting of relatively long staple yarns, the warp consisting of long staple yarns with intermediate short staple yarns arranged in alternate single succession, the latter of these consisting substantially entirely of staples so short as to provide ends sufficient in number to afford a fuzzy surface for such yarns, these short staple yarns being lustrous, and the other warp yarns being twisted and consisting substantially entirely of staples of such substantial length as to produce a non-fuzzy yarn surface contrasting with the surface of the short staple yarns to thus directly produce an optical ribbed effect transverse to the warp with the fabric

characterized by a moderate, deep seated lustre afforded by the short staple fuzzy yarn surfaces.

New British automatic loom. Anon. *Textile Recorder 68*, 95-6 (Oct. 1950).

A new 45-inch loom weaves a colored woven stripe shirting at 180 ppm, plain weave, with 2/100s warp, 140 ends per inch, and 2/28s filling, 50 picks per inch. The machine carries standard Lancashire loom parts except for a unique filling battery, which is z-shaped and feeler-operated. Feelers may be electrical or mechanical. Mfr: Keighley Ltd., Burnley, England.

Pile fabric. Ralph R. Cone & Willard Lewis (to Riverside Mills) USP 2 521 831, Sept. 12, 1950.

A pile fabric comprising a plurality of textile pile elements having base portions secured together by an adhesive and having free ends defining a finished surface of the fabric, and textile spacer elements secured between certain of the pile elements near their base portions only.

Process of manufacturing crushed velvet. Theodore Van Heek. USP 2 524 119, Oct. 3, 1950.

In the process of manufacturing crushed velvet by twisting and compressing velvet material having a pile comprising thermoplastic material, the step of thoroughly heating the velvet material while being in the twisted and compressed condition in the presence of moisture to a temperature between 140 and 212° F.

Production and application of alginate rayon. *Kunstseide und Zellwolle 28*, 11-12 (1950).

The method of producing alginate yarn from alginic acid extracted from seaweed is briefly reviewed. The application of the soluble alginate yarn in the weaving of light-weight wool fabrics is described and illustrated.

Textile fabric. Boutwell H. Foster (to U. S. Rubber Co.) USP 2 521 055, Sept. 5, 1950.

A thin strong, highly flexible, closely constructed fabric having a gauge of about .018" and woven of flat warp and weft strands so that there are about fifty of such strands to the square inch and each lies as a flat non-twisted ribbon in the fabric, each strand being a compact strong, flat textile strand several hundredths of an inch wide and formed of longitudinally parallel staple textile fibers permanently bonded together without twist solely by a dried organic adhesive.

Reversible ready-made diaper. Sybil B. Geeslin (to Perdue Mfg. Co., Inc.). USP 2 523 989, Sept. 26, 1950.

A diaper comprising a keystone-shaped body portion formed of a plurality of plies of diaper cloth having a short bottom edge, a longer top edge and sides tapering along a substantially straight line from the top edge to the bottom edge, a plurality of fastening means arranged in each of the upper corners of one side of the body portion, and a plurality of fastening means arranged in each of the lower corners on the opposite side of the body portion whereby the diaper may be fastened by the fastening means by placing the diaper in position with the fastening means on the underside of the lower corners, folding the bottom edge of the diaper up over the body portion and then folding each of the upper corners over the bottom edge and engaging the fasteners in the upper corners with the fasteners in the corresponding lower corners, and the diaper may also be fastened by the fastening means by reversing the diaper to place the fastening means on the topside of the lower corners, folding the upper corners over the body portion and then folding the bottom edge of the diaper up over the body portion and the folded upper corners and engaging the fasteners in the upper corners with the fasteners in the corresponding lower corners, the fastening means being arranged in lines and similarly spaced in the lines for cooperation of the fastening means in the upper corners with the fastening means in the lower corners whereby the fastening means may be overlapped for engagement of a plurality of fasteners in corresponding lines to conform the diaper to a small size and a lesser number of the fasteners may be overlapped and engaged to conform the diaper to a larger size, the lines of fastening means in the lower corners departing upwardly from the short bottom edge, and the lines of fastening means in the upper corners departing downwardly from the top edge much less than the angle of departure of the fastening means from the botto medge so as to form a smooth fitting reversible ready-made diaper in which either side of the garment can be used next to the wearer.

Textile fabric. Boutwell H. Foster (to U. S. Rubber Co.) USP 2 521 055, Sept. 5, 1950.

A thin, strong and highly flexible fabric is produced from flat-non-twisted ribbons several hundredths of an inch wide formed of parallel staple textile fibers permanently bonded together without twist by a dried adhesive.

Wool and rayon 18-ounce serge. Anon. *Am. Wool Cotton Reptr. 64*, 16, 43 (Nov. 2, 1950).

Quartermaster specifications for a 70% wool and 30% rayon 18-ounce serge for Army uniforms

are summarized, and some of their special features are discussed.

Fabric applications C 6

Belting. Geo. A. Sowerby & Wm. S. Short (to Geo. Angus & Co., Ltd.). USP 2 520 699, Aug. 29, 1950.

A friction surface belt comprising a strip of knitted fabric formed of elongated interconnected loops stretched in the lengthwise direction of the strip and tied together into tight knots at their intersections, substantially all of the surfaces of the stitches comprising the same being coated with rubber, with the adjacent surfaces of crossing stitches within the knots being bonded together by rubber, the belt having substantially no tendency to contract and having an extension at break of about 3 to 17%.

Insulating material. James C. Crawford, Jr. (to Johns-Manville Corp.) USP 2 520 914, Sept. 5, 1950.

An insulating material comprising a flexible sheath having a facing formed of a readily flexible, distortable and stretchable fabric comprising heat-resistant strands, and an opposite facing formed of a relatively non-stretchable fabric in relatively non-stretchable condition, the fabrics being secured together adjacent the edges of the sheath, and a readily distortable, fibrous insulating filling within the sheath.

Plastic springs. Anon. *Business Week* (Oct. 7, 1950).

Susquehana Mills, Inc. introducing a springless mattress core made of air-filled cubes of vinyl film, using 136 plastic cubes, individually sealed, in a twin-bed size mattress.

Research in cloth raising. Anon. *Wool Science Review* (Sept. 1950).

Outlines results obtained from study of napping operation on woolen fabrics and describes experimental methods used at Leeds University.

STANDARD FINISHING D

Bleaching of cellulosic textiles. Ralph L. Carr (to Mathieson Chemical Corp.) USP 2 521 340, Sept. 5, 1950.

In the bleaching of cellulosic textiles by treating the textile with an aqueous solution of a chlorite activated by the presence of a hypo-chlorite and having a pH not less than 7, the improvement which comprises effecting bleaching of the textile with the solution at a temperature in excess of

100° F. without appreciably diminishing activation of the chlorite by decomposition of the hypochlorite, the bleaching being effected by impregnating the textile with the solution and steaming the impregnated textile in the presence of only so much of the solution as is retained in the textile, for a period of time sufficient to effect the desired bleaching.

Bleaching by chlorine products. With special reference to Ahmedabad Textile Industry. K. K. Shah. *Indian Tex. J. 60,* 868-73 (Aug. 1950).

Describes methods of bleaching textiles in India using liquid chlorine and bleaching powders. Chemical requirements for the bleachers are cited and precautions to avoid tendering of the fabric are listed.

Bleaching cellulosic textiles. Ralph L. Carr (to Mathieson Chem. Corp.) USP 2 521 340, Sept. 5, 1950.

Cellulosic textiles are bleached by impregnating with a hypochlorite solution and steaming.

Cloth bleaching operation. Henry M. Schmitt (to Minneapolis-Honeywell Regulator Co.) USP 2 522 900, Sept. 19, 1950.

In the cloth bleaching operation in which water wet cloth is passed continuously into and through a bath of bleaching liquor, the method of regulating the volume while maintaining the composition of the bath liquor substantially constant which consists in increasing and decreasing the rates at which water is carried into the bath by the cloth and at which a bleaching agent uniting with water to form bleaching liquor is passed into the bath in predetermined accordance with decreases and increases, respectively, in the height of bath level, and in squeezing the cloth passing away from the bath to reduce the reduction in the volume of the liquor bath produced by the movement of the cloth through and away from the bath.

Fabric finishing and successful sewing. H. Wedemeyer. *Textile Age 14,* 54-7 (Oct. 1950).

A discussion is presented on the probable causes and possible remedies of the following sewing problems: seam puckering, fabric scorching or fusing, and cutting of yarns. A test procedure for testing the sewability of men's suiting is described.

Fabric Tearing Machine. Herbert W. Beall (to The Springs Cotton Mills) USP 2 523 183, Sept. 19, 1950.

The invention relates to a machine for tearing off lengths of sheet material from a strip of ma-

terial of indefinite length, and it is an object of the invention to provide simple and effective means whereby pieces of predetermined length may be severed from a strip of indefinite length by a tearing operation. The method uses a conventional source of supply of strip material, such as a roll of material suitably supported for rotation as the strip is drawn off. The strip passes from the supply about a guide roll, between a pair of feed rolls, and then about a measuring roll. At the side of the measuring roll remote from the point of first contact of the strip with the measuring roll there is located a rubber covered feed roll which coacts with the measuring roll to feed the strips through the machine. The measuring roll carries means for making an initial incision in the strip, comprising a radially movable cutting knife mounted on a reciprocatory bar that is radially slidable on the measuring roll in a bearing and which is normally forced inward by means of a spring. The knife is pointed and so shaped as to be first pushed through the strip at a little distance from the side of the strip, after which it cuts its way through the strip at a little distance from the side edge of the strip, after which it cuts its way through to the edge of the strip, due to the inclined sharp edge at one side of the knife. The length of the piece to be torn off is governed by circumference of the measuring roll. For operating the knife at the appropriate time, a cam is mounted in fixed position on a beam forming part of the framework of the machine. In the operation of the machine, a strip of cloth is fed from the supply, passes about the measuring roll until the primary severing device makes an incision adjacent an edge of it due to action of the cam after which the material will be drawn through the machine by the conjoint action of rolls.

Literature survey of textile bleaching. John F. Hagen. *Am. Dyestuff Reptr. 39,* P663-66 (Oct. 2, 1950).

A bibliography of literature to facilitate a comparative study and analysis of continuous-peroxide and semi-continuous-hypochlorite methods of bleaching.

Method of closing bag tube ends. Henry H. Allen (to Bemis Bro. Bag Co.) USP 2 524 030, Oct. 3, 1950.

A method of closing and sealing an open bag top, which consists in pressing the walls of the open bag end into flatwise relation with the edge walls intucked between the side walls, thereby to provide an outwardly facing recess at each end of the bag top, bonding together the marginal edge portions of all of the walls along the length of the bag top, applying a strip of tape of uniform width its full length over the flattened bag top with its end portions projecting beyond the side edges of the partially sealed bag top and whereby the projecting end portions are U-shaped in cross-section, tucking the projecting U-shaped tape ends into the recesses provided at their respective ends of the bag top and adhering them to the adjacent outer surfaces of the intucked edge walls, and subsequently applying an adhesive to the exposed surfaces of the intucked tape ends and pressing the surfaces into intimate bonding engagement with each other at each corner of the bag top.

Mercerization of cotton piece goods. 2. Cotton fabrics containing viscose rayon. A. J. Hall. *Fibers 11,* 351-54 (Oct. 1950).

Discusses the problems and the required processes for mercerizing fabrics of cotton-viscose rayon blends.

Seam detector. Herbert W. Beall (to The Springs Cotton Mills) USP 2 523 184, Sept. 19, 1950.

The invention relates to a seam detector for use in connection with the handling of long lengths of cloth that are made up by joining shorter lengths by sewing a seam across the run of the cloth thereby joining adjacent end portions. These seams may be lapped seams or flat seams or mixed. In tearing these long lengths into shorter lengths to make sheets, etc., it is desirable to arrange the varying lengths of cloth into which sheets may be made so as to make the seam fall near or adjacent the end of a sheet so that the seam may be torn out with the minimum of waste. In order to avoid such waste it is necessary to warn the operator some time in advance of the approach of a seam. The present invention is an improvement on present seam detectors. It includes: means for detecting a seam in a traveling strip of material, comprising a plurality of circuit closers arranged in a line substantially across the path of the strip, and means operable only upon simultaneous closing of all the circuit closers for indicating the occurrence of a seam. A seam detector for sheet handling devices, comprising a supporting member over which the material travels, a plurality of feelers contacting the material and arranged in series extending transversely of the travel of the material, and an electric circuit including a plurality of contacts in series the contacts being operable by the feelers.

Setting apparatus for textile fabrics. Henry Richter (to Paramount Textile Machinery Co.). USP 2 520 062, Aug. 22, 1950.

The combination in setting apparatus of the class described, of a retort having an opening, a form carriage mounted for movement through the opening into and out of the retort, a door for closing the opening, means including a steam valve for permitting steam to be introduced into and exhausted from the retort, means including an electrically operated pilot valve for controlling the flow of steam through the steam valve into the retort, means including a solenoid operated siphon valve for controlling the exhaust of steam through the steam valve from the retort, an electric circuit including the pilot valve and the siphon valve, timing devices connected in the circuit for controlling the operation of the pilot valve and the siphon valve, a limit switch and a starting switch connected in the circuit, means actuated by the movement of a carriage into the retort for closing the limit switch, and means actuated by the closing of the door for closing the starting switch.

Suction fabric drying machine. Anon. *Dyer 104*, 295-6 (Sept. 8 & 22, 1950).

High extraction and drying efficiency is claimed for a suction drying machine patented by Richmond Piece Dye Works, Richmond, Va., and described by Brit. P. 639,786. A suction tube is mounted inside a metal drying cylinder, the perforations of which permit suction drying, the suction being supplied by a condenser or suction pump.

Symposium on detergency. Anon. *Textile Industries 114*, 275 (Nov. 1950).

In a technical symposium on detergency (Southeastern section of AATCC), Dr. W. J. Hart of the Institute of Textile Technology said that CMC (carboxymethylcellulose) has properties that make it desirable in textile detergents. Principally, it boosts detergent action. Institute experience indicates that 1-2% of CMC (on weight of detergent) is sufficient. About 1% of detergents used in America contain CMC, though it was said to be in wide use abroad. Medium-viscosity CMC is suggested for this use.

The use of chlorite in the textile industry. H. J. Meybeck. *Textil Rundschau 5*, 349-62 (Sept. 1950); *in German.*

Reviews the chemistry of the chlorites, including stability of aqueous solutions as a function of pH, reaction with hypochlorite, chlorine, hydrogen in the textile industry with particular reference to the bleaching of cotton. Bleaching of viscose rayon, bast fibers, and polyamide fibers is also referred to, and the effect of chlorite on protein fibers is discussed. Tables. 46 references.

DYEING AND PRINTING E

AATCC intersectional contest paper winners. Anon. *Am. Wool Cotton Reptr. 64*, 15, 18 (Oct. 12, 1950).

Abstracts of 4 papers, presented at the AATCC convention, which include continuous nylon dyeing, relating laboratory exhaust data to mill practice, the aliquot method of determining oil content of textiles, and spectrophotometric studies of continuous dyeing.

Affinity of synthetic fibers for dyes. J. W. Shirley. *Rayon & Syn. Tex. 31*, 83-4, 91 (Oct. 1950).

The addition of delustering agents to viscose fibers is believed to disrupt the uniform fiber structure and thereby adversely affect the light fastness of the dyed fiber. The use of a surface active agent to equalize the change in light absorption by the delustering agent is suggested. The dyeing of cellulose acetate, nylon and dynel is also discussed and recommendations made for overcoming dyeing problems met with these fibers.

Behavior of dyed materials on washing. H. Holderegger. *Textil-Rund. 5*, 191-97 (May), 232-37 (June), & 269-77 (July 1950).

A detailed study of the behaviour of dyed cotton and wool on washing. The influence of soap conc., liquor ratio, temperature, and time on staining of white material and on loss in depth are assessed by means of the Pulfrich photometer and expressed graphically. The fastness to washing of dyeings on damaged and undamaged wool is compared. The effect of wetting-out agents, soda, and other electrolytes on the washing liquor is examined. The improvement in washing fastness by after-treatment with synthetic resins of the melamine-formaldehyde of melamine-urea type is found to be caused by reduced swelling of the fibers during the washing process.

Blickman jig enclosures. Anon. *Am. Dyestuff Reptr. 39*, 676 (Oct. 2, 1950).

Custom-built enclosures to fit any jig are made of stainless steel, resulting in steam savings, prevention of spotting, and elimination of dye house fog. Mfr: S. Blickman, Inc., Weehawken, N. J.

Develop new printing blanket. Anon. *Daily News Record* (Oct. 24, 1950).

Dewey & Almy Chemical Co. offers new-type blanket for textile printing made of natural and synthetic fibers welded with synthetic rubber.

Development and practice of khaki dyeing. B. S.

Bhende & S. R. Ramchondran. *Indian Tex. J. 60,* 895-97 (Aug. 1950).

Cites the background and describes the various methods which have been used to obtain suitable shades of khaki.

Dyeing after-treatment. Lovegen W. O. Weber. *Melliand Textilber 31,* 494-6 (July 1950); *in German.*

Discusses after-treatment of direct dyeings with cation-active compounds, and describes properties, method of application and advantages of Levogen WW, a leading product of this class.

Dyeing of "Orlon" acrylic fiber. Anon. *The DuPont Technical Bull. 6,* 155-9 (Sept. 1950).

Dispersed acetate and vat colors are the most practical for dyeing "Orlon" acrylic fiber. On piece goods, the acetate dyes are valuable for obtaining pastel to medium shades in jig and beck equipment at 212° F. and by "Thermosol" application. On "Orlon" yarn, pressure dyeing at 250° F. yields level shades of good depth although exhaustion efficiency is relatively low. The insoluble vat colors, dyed at 212° F. on the jig, produce a wide range of shades. However, black, brown and maroon are obtained only with high concentrations of caustic and result in some damage to the fiber. Soluble vat colors are applied by padding fabric with the dye and sodium nitrate, followed by treatment at 200° F. on the jig with hydroxyacetic acid. Level, light shades result, having excellent fastness to light and washing, which are desirable for "Orlon" shirting.

Dyeing organic derivative of cellulose textile material with an aqueous solution comprising a leuco vat dye, a water-miscible organic base, and diacetone alcohol. Henry Charles Olpin & Edmund Stanley. (to Celanese Corp. of Am.) USP 2 524 072, Oct. 3, 1950.

Process for the coloration of textile material of an organic derivative of cellulose with a vat dye, which comprises subjecting the material to the action of a leuco compound of the vat dye in an aqueous medium containing a water-miscible organic base which is a swelling agent for the cellulose derivative and sufficient diacetone alcohol to impart to the aqueous medium a substantial swelling action on the cellulose derivative, and thereafter directly washing the material and oxidizing the leuco compound thereon to the parent vat dye.

The effect of abrasion on the dyeing characteristics of cotton. Kenneth A. Jenkins & Harold F. Keels. *Am. Dyestuff Reptr. 39,* P660-61 (Oct. 2, 1950).

When cotton knit goods are abraded in a small area with sandpaper mounted in a Crockmeter, the abraded area has more affinity for some dyes than has the unabraded area. The chemical condition of the goods before and during abrasion influences the effect of abrasion on modification of dye affinity. Experiments indicate that the effect of abrasion on affinity can be minimized by selection of dyes.

Fast shades on nylon textiles. G. T. Douglas. *Can. Textile J. 67,* 47-51 (Sept. 29, 1950).

The dyeing of nylon is discussed with details given of the application of chroms dyes, vat dyes, solubilized vat dyes, and azoic dyes to nylon. Also discussed is the dyeing of wool-nylon blends, nylon-cellulosic blends, and nylon-silk blends.

Fiber damage in printing fabrics. A. J. Hall. *Textile Mercury & Argus 123,* 583, 585-6 (Oct. 13, 1950).

Certain forms of salts have always been known to damage cotton during preparation for dyeing and printing. Copper and iron especially are harmful. They accelerate the bleaching action of chlorine or hydrogen peroxide liquors. But now, it is also recognized that these metals can be equally as harmful in printing pastes containing alkali and Rongalite (sodium formaldehyde sulphoxylate). These pastes generally are used to produce vat coloring and for discharge work.

Copper and iron promote oxidation that degrades the fiber and weakens the tensile strength. Only regenerated cellulose—viscose and cupra rayons—are affected. Cotton fabrics resist this new form of attack. Experiments show that the greater part of fiber damage occurs within the first ten hours of lying. The principal point made by the author: printers should avoid as much as possible allowing the printed fabric to lie about in a moist state before or after printing. Especially is this true under warm conditions. W. Schonberger (*Melliand Textilber 31,* 636, 1950) says that some protection can be given the rayon fabrics by anti-oxidant agents such as polyoxy and polyamino-compounds. Brenzol I (a mixture of polyoxy compounds) and hydroquinone were the protectants used.

Glen Raven uses yarn-dyed orlon in awning stripe. Anon. *Natl. Canvas Goods Mfrs. Rev. 26,* 49 (Aug. 1950). See front section.

Lightfastness ratings of vat dyes on cotton. M. Babey, S. J. Lucian & R. J. G. Schofield. *Calco Tech. Bull. 813,* 5 pages (1950).

Most vat dyes shade cards give light fastness

ratings for only two or three depths of shade and when these strengths are designated as light, medium or dark, the information is bound to be vague. By rating a wider range of color values and of specific strengths this bulletin provides the dyer with more complete and more exact information about the light fastness of vat colors on cotton.

In general it may be said that these ratings also apply to combinations of dyes but there are some notable exceptions. Combinations of certain vat dyes produce shades with light fastness considerably better than would be expected because of the components used, but the opposite may also be true when certain other dyes are combined in a dyeing.

It is a commonly accepted theory that the light fastness of vat dyes increases at a uniform rate as the strength of shade is increased. This is true with many dyes but here again there are exceptions to this pattern. Chart shows Fade-Ometer ratings of various dyes.

Macbeth-Ansco Densitometer. Anon. *Am. Dyestuff Reptr. 39,* 675 (Oct. 2, 1950).

Accurate measurement of color densities in narrow spectral ranges, and of visual densities over a wide range are reported easily accomplished by the new Macbeth-Ansco Color Densitometer. Mfr: Macbeth Corporation, Newburgh, N. Y.

Measurement of dye strengths. E. I. Stearns. *Calco Tech. Bull. 812,* 13 pages (1950).

If two dyes do not differ in shade, their relative strength can generally be estimated visually to the nearest 5%. In this evaluation better precision is obtained by making two dyeings of each rather than one dyeing of one and three of the other. Blue dyes are more easily evaluated than yellow dyes because a concentration change in the blue dye usually has a greater effect on the reflected light. Special techniques to improve the precision of strength readings to 1% involve combination dyeings with other dyes. If two dyes do differ in shade, strength comparisons are only approximate, as colorists will disagree. Colorists tend to underestimate the amount of real dye present if there is an additional dulling component present. Reflection curves of dyeings can probably be made to give the strength of off-shade dyes, but first it will be necessary for the colorists to agree so that spectrophotometric data can be correlated with visual data.

Some factors other than shade differences that affect strength estimates are the kind of fiber, the method of dyeing, and the concentration of dyeing. There are two separate factors which

influence "build-up" in dyeing: one is a variation in percentage exhaustion with concentration, the other is a colorimetric factor, which involves the shape of the spectrophotometric curve of the dye. Spectrophotometric evaluation of strength of dyes that do not differ in shade can be carried out by use of the Pineo modification of the Kubelka and Munk formula which relates dye concentration on the fiber to reflectance of monochromatic light.

Mechanical and chemical damage to fibers during printing. W. Schonberger. *Melliand Textilber 31,* 636-8 (Sept. 1950); *in German.*

A brief discussion of the mechanical and chemical damage done to the fiber in textile printing is followed by detailed treatment of the catalytic damage caused during printing fabrics composed of regenerated cellulose in the presence of metal compounds, such as iron and copper salts, when printed with alkaline printing pastes containing Rongalite and are allowed to lie for some time in a moist condition before or after steaming. Aromatic polyhydroxyl or polyamino compounds protect the fiber against that catalytic oxidative damage.

New account of the Standfast process. Anon. *Dyer 104,* 303, (Sept. 8 & 22, 1950).

Advantages of the molten metal process of continuous dying known as the Standfast process, are described as follows: pale to medium shades are dyed at 60-100 ypm, medium to heavy shades at 30-60 ypm; increased penetration and fastness equal to the best jig dyeing; process never varied for the different classes of vat dyes; savings in dyes, chemicals, steam, and water; simple cleaning method which cuts time loss in changing fabric or shade. Patented by Standfast Dyers & Printers, Ltd., the machine is being licensed to machinery manufacturers. (See front section).

New dyes and finishes for synthetics shown at AATCC Exhibit. Anon. *Textile World,* 171, 173, 234 (Nov. 1950).

Among the new dyeing and finishing agents and equipment shown at the AATCC Portsmouth exhibit, the following were featured: a radioactive tracer in detergents; a water-soluble antistatic agent for nylon; Dow's Dessetex 104 (a water-repellent finish expected to retain a spray rating of 90-100 after ten dry cleanings); Neutracyl colors for nylon stock, top, or tow; and four new testing machines, including the Marney dyeing machine for controlled laboratory dyeing, a scorch oven tester by Cluett Peabody for determining chlorine retention by fabric after finishing, and the AATCC Accelerator that gives the equiva-

lent of 30 commercial launderings in four minutes.

New enzyme aids continuous dyehouse operation. Anon. *Daily News Record* (Aug. 31, 1950).

Royce Chemical Company's new high temperature enzyme ("Neozyme") can be used at up to 190° F. making possible use in single run on high speed continuous operation. Also suitable for removal of gelatin at 130° F. or starch at 160° F.

Package dyeing with particular reference to Barber-Colman cheeses. T. H. Jackson. *Can. Textile J. 67*, 52-4 (Sept. 29, 1950).

A report is presented on the experiences of Canadian Cottons, Ltd. with Barber-Colman package dyeing. Included in the discussion are: the advantages and disadvantages of Barber-Colman package dyeing; a description of the machines used; preparation of the yarn; and data on the use of direct colors, sulfur dyeing, naphtols, and vats.

Piedmont AATCC papers. Anon. *Textile Bull. 76*, 69-70, 72 (Oct. 1950).

A review of news from the Portsmouth Convention of AATCC, and brief summaries of the following papers: "The Scientific Approach to the Study of Coloring and Finishing of Textiles," by Dr. Geo. L. Royer; "A Comparison of the Dyeing Characteristics and Related Properties of Rain-Grown and Irrigated Cotton," by Henry A. Rutherford; "The Continuous Dyeing of Nylon Fabrics," "The Relating of Laboratory Exhaust Data to Mill Practice", "Comparison of Referee Soxhlet and Rapid Method of Oil and Grease Determination"; "The Strip Tester, an Instrument Designed to Measure Dimensional Change in Woven Fabrics"; "Spectrophotometric Studies of Continuous Dyeing".

Problems of continuous dyeing. R. G. Fargher. *Textile Mercury & Argus 123*, 590, 609 (Oct. 13, 1950).

A contrast between methods of continuous dyeing used on the European continent and those used in the United States. The Williams "booster" unit is described as having overcome many of the weak points in both European and American practice.

Printing synthetics brings multiplicity of problems. Arthur F. McLean. *Am. Wool Cotton Reptr. 64*, 31-2, 68 (Oct. 12, 1950).

In a speech on the trends and mill problems in printing synthetic fabrics, presented at the 29th annual AATCC convention, methods of overcoming dyeing, shrinkage elongation, and engraving difficulties in printing are discussed.

Some problems of rayon dyeing. Part VIII—Acetate rayon. A. G. Tyler. *Brit. Rayon & Silk J. 27*, 61-2 (Sept. 1950).

A review of principal problems in acetate-rayon dyeing.

Studies on wool dyeing: the influence of the cuticle in the dyeing of the wool fiber. H. E. Millson & L. H. Turl. *Am. Dyestuff Reptr. 39*, P647-56 (Oct. 2, 1950).

Observations of scalewise dyeing under the microscope suggest that the cuticle might resist penetration by dyes of all types. Under suitable conditions, this effect might be observed in general. The time—temperature studies were made with such dyes as Calcocid Alizorine Blue Sky and Blue Sapg, and Calcochrome Fast Green SGV. The influence of the scales on dye penetration was also shown by physical distortion of the fiber. Knots were tied in single fibers of Australian fleece, and the dyeing was studies under the microscope. It was noted that the scales were free at the distal edges. They tended to separate under physical distortion. Dye penetration was rapid at the distal end of the separated scales. The knots were colored rapidly on the inner and outer portions.

Studies in wool-dyeing. G. N. Bhat, A. N. Kothareand, & V. F. Nadkarny. *Indian Tex J. 60*, 889-93 (Aug. 1950).

Discusses three experiments, one of which is the determination of the effect of variation in concentration of salts used in the exhaustion of dye baths, the second is the effect of variation in concentration of one component of different binary mixtures of salts used for exhaustion of dye-baths and the third is the effect of non-electrolytes at various concentrations on the exhaustion of dyebaths. Conclusions reached as the result of the first experiment are: (1) that some slats increase the dye fixation with their addition in increasing amounts until a maximum effect is reached and (2) some salts when added in increasing concentrations cause a decrease in dye-take up. From the second experiment it is concluded that (1) the presence of certain salts favor the exhaustion of the dye-bath caused by Na Cl alone, (2) the extent of exhaustion of the dyebaths by NaCl is increased by increasing the quantities of some salts until a maximum of dye fixation is reached and (3) a third group always produces an inhibiting effect. The general conclusion reached as the result of experiment three is that non-electrolytes have an inhibiting influence on wool-dyeing.

The aqueous dyeing of Fiber V. Anon. *The*

DuPont Technical Bull. 6, 146-54 (Sept. 1950).

Current dyeing methods for Fiber V fall into 3 broad classifications, namely, unassisted dyeing, "carrier" dyeing and pressure dyeing. The only dyes that have been successfully applied to this fiber on a large scale, from an aqueous bath, are the dispersed acetate colors. Procedures for dyeing the staple yarn and sewing thread are outlined. A table, showing the comparative absorption of acetate dyes by continuous filament sewing thread, is presented. Fabric dyeing is discussed and color recommendations made.

Union dyeing of mixed fabrics of cellulose ester and animal fibers with alkaline reduced vat dye solutions containing swelling agents. George C. Ward & William T. Haggerty, Jr. (to Celanese Corp. of Am.) USP 2 524 093, Oct. 3, 1950.

Process for the union dyeing of textile materials with vat dyestuffs, which comprises treating a mixed textile material consisting of an organic acid ester of cellulose textile material in admixture with an animal fiber material with an aqueous alkaline solution of an alkali metal salt of a leuco vat dyestuff at a pH of 10.5 to 11.5 containing a salt of thiocyanic acid and 10 to 30% by weight of diacetone alcohol maintained at a temperature of 55 to 65° C., rinsing the treated material directly after treatment, and oxidizing the leuco vat dyestuff on the wet, rinsed fabric.

Union dyeing of cellulose cellulose—ester textile materials with vat dyes. George C. Ward & William T. Haggerty, Jr. (to Celanese Corp. of Am.) USP 2 524 092, Oct. 3, 1950.

Process for the union dyeing of textile materials with vat dyestuffs, which comprises treating a mixed textile material consisting of an organic acid ester of cellulose textile material in ad-mixture with a cellulosic textile material with an aqueous alkaline solution of an alkali metal salt of a leuco vat dyestuff at a pH of 10.5 to 11.5 containing 0.5 to 5% by weight of sodium thiocynate and 20 to 35% by weight of diacetone alcohol at a temperature of 40 to 70° C., for 15 seconds to 2 minutes, rinsing the treated textile material directly after treatment, and oxidixing the leuco vat dyestuff on the wet, rinsed textile material.

Vat dyes on wool-rayon staple mixtures. R. C. Chettham. *J. Soc. of Dyers & Col. 66*, 478-83 (1950).

It is well known that difficulties are encountered when vat dyes are applied to animal fibers by normal methods chiefly owing to the loss of tensile strength due to the fibers being attacked by the alkaline liquors. In addition, when animal fibers are found in admixture with cellulosic fibers, it is often desirable to obtain solid shades on both types of fibers with vat dyes. Methods are suggested for achieving both these aims by incorporating sodium metadisilicate in the alkaline reducing liquor, and then adding sodium bisulphate to reduce alkalinity and secure solidity of shade. The method of calculating the required amount of sodium bisulphate is described, and attempts are made to show how sodium silicate contributes to the efficiency of the process. Light and washing fastness tests have been carried out, the results indicating, in general that normal fastness standards are maintained.

Wool/rayon dyeing. O. Hohmuth. *Kunstseide und Zellwolle 27*, 247-50 (1949); *in German.*

Describes a procedure for dyeing wool/rayon mixture fabrics, using sulphur dyes in conjunction with sodium bisulphite solution for dyeing the cellulosic component and metachrome dyes for the wool. Protectol W liquid is used to protest the wool fibers against damage. The optimum pH is result in any significant loss of strength. HA

SPECIAL FINISHING F

Apparatus for condensing fabrics. Franklin Chatfield (to Redman Trust) USP 2 522 663, Sept. 19, 1950.

In an apparatus for condensing fabric, a pair of readily compressible resilient elements having portions of their peripheries disposed in fabric feeding relation, and means whereby the fabrc feeding portions of the elements are compressed to cause the peripheral portions of the elements continually moving into fabric feeding engagement with the fabric to elongate and thereafter shorten, whereby fabric fed between the elements is condensed in a lengthwise direction by the contraction of the elongated peripheral portions of the elements, as the elongated peripheral portions are restored to their normal contracted conditions.

Canvas and heavy fabric made fireproof and water-repellent simultaneously. (Taken from "Survey of German Heavy Textile Proofing Industry", British Industry OS report No. 2187; *Textile J. Australia 25*, 588, 590, 594 (Aug. 21, 1950). See front section.

Deordorizing urea-formaldehyde finishes. P. Swillens. *Rayonne 6*, 52-4 (Oct. 1950).

A method of reducing the formation of trimethylamine, which imparts a fishy odor to fabrics, is to increase the formation of monomethylamine which has an ammoniacal odor; the ammonia being used in the precondensation of the resin. An alkali wash and good rinsing help eliminate the unpolymerized compounds and the methylamines which are formed during boiling.

Effect of resin treatments on spun rayon dyed with direct colors. Anon. *The Technical Bull. 6,* 120-7 (Sept. 1950).

Treatment with either urea-formaldehyde or melamine exerted a decided influence on the shade and fastness properties of many of the direct color dyeings. In most cases the wash fastness is appreciably improved, whereas the light fastness is substantially improved by urea-formaldehyde. Included in the experimental data is a table describing the effect of the resins on the shade and fastness properties.

Heat stabilization of saran. Edgar C. Britton & Walter J. LeFevre (to Dow Chemical Co.) USP 2 525 643, October 10, 1950.

Saran is heat-stabilized by means of alpha-amino-alpha-toluic acid.

Improving heat-resistance of textiles. H. M. Buckwalter & P. D. Montgomery (to U. S. Rubber Co.) USP 2 521 446, Sept. 5, 1950.

The resistance of regenerated cellulose fibers to deterioration by heat is improved by incorporating in the fibers at least 0.25% by weight of guanazole.

Mothproofing agents. Anomalous results of moth-proofing tests. K. P. Lamb. *Nature 166,* 37 (Jan. 7, 1950).

Describes anomalous results obtained in testing two moth-proofing agents, (1) a substituted urea derivative, and (2) a sulphuric acid derivative of triphenyl methane. The compounds were determined by loss-of-fabric tests with the larvae of two species of clothes moth: determinations were made after 2, 4, and 6 washings. Chemical analysis showed a loss of moth-proofing agent with washing, but there was a steady increase in moth-proofing efficiency after each washing in the case of dyed but not of undyed fabric. Graphs.

Process for shrink-proofing wool and woolen fabrics. Everett N. Angus, Joseph W. Creely & Ralph M. Fischer (to Eavenson & Levering Co. and Am. Cyanamid Co.) USP 2 522 338, Sept. 12, 1950.

A process for controlling the shrinking, felting and fulling of wool which comprises impregnating raw wool with from 2.5% to 30% of its weight of an uncured thermosetting resin selected from the group consisting of unreaformaldehyde, thiourea-formaldehyde and melamine-formaldehyde resins in the form of an aqueous solution, drying, carding and spinning the impregnated wool and finally heating the wool at a temperature within the range of 200-450° F. until the resin is converted to its cured and water-insoluble condition.

Resins can improve good fabrics. Ralph M. Fischer. *Textile J. Australia 25,* 566 (Aug. 21, 1950). See front section.

Resorcinol. Its applications for textiles. Edwin W. Shand. *Rayon & Syn. Tex. 31,* 79-80, 82 (Nov. 1950).

The varied uses of resorcinol include: dyeing intermediate and developer; solvent in printing pastes containing basic colors and tannin mordants; lyotropic agent for the welling of natural and synthetic fibers, a finding that may have application to mercerizing, sizing, dyeing, and finishng; assstant in the shrinkproofing of wool and the bonding of rayon tire cords to rubber.

Shrink-proofing textiles. Leo Beer (to Alrose Chem. Co.) USP 2 521 328, Sept. 5, 1950.

Textile fabrics of regenerated cellulose are stabilized against shrinkage upon washing by glyoxal and a metal silicofluoride as a catalyst.

Stabilizing rayon fabric. Alrose Chemical Co., Brit. P. 637 656.

Process of treating rayon fabric so as to stabilize it against contraction in the course of subsequent treatment or laundering, comprises subjecting a continuous length of fabric, while maintained in the open width and in a slack condition longitudinally, to immersion in a solution of caustic alkali in concentration of 30% to 50% at a temperature of 20° to 60° C. for a period of not more than 10 secs. Excess caustic solution is squeezed out until the fabric retains 60% to 100% based on the fabric weight and it is neutralized directly without prior dilution of the caustic alkali in the treated fabric.

The application of moth-resistant treatments II. C. H. Bayley. *Textile Age 14,* 34-8 (Oct. 1950).

This is the second of two articles on how the Canadian defense services attacked the problem of fabric damage by moths and similar insects. Included in the discussion are: plant application of compounds by cloth finishers and launderers and dry cleaners with detailed data of results

obtained; minimum requirements for satisfactory performance of resistance to larval feeding and of permanence of treatment.

The mildewing of wool. Anon. *Wool Science Review* (Sept. 1950).

Reviews some of the causes, means of detection and prevention of mildew on wool.

The new finishes. 3—Dimensional stability in wool fabrics. A. J. Hall. *Textile Mercury & Argus 123,* 457, 462 (Sept. 22, 1950).

A review of American practice in the shrink-proofing of wool fabrics.

The story of Everglaze, a finisher's dream come true. Anon. *Am. Wool Cotton Reptr. 64,* 12-16, 55 (Oct. 19, 1950).

The background and contemporary make-up of Joseph Bancroft & Sons Co. and the development of its Everglaze finish for fabrics are reviewed. A chart is presented to illustrate the processes for mechanical all-over and textures effects for Everglaze fabrics.

Tricks of the trade—stabilization of rayon, and saponification of acetate rayon. Kenneth S. Campbell. *Textile Bull. 76,* 73-4 (Oct. 1950).

The "Avcoset" process is said to be as good or better than any other stabilization treatment now used for shrink control of viscose rayon fabrics, being ostensibly well suited for fabrics such as those for fitted shirts, washable dresses, etc. The formula for such treatment is given in detail, followed by preparation of formula, and finishing procedure.

A potential use is visualized of the differential saponification technique as a means of determing whether an acetate-rayon fabric or yarn defect is due to physical strain or some other cause, the possible use being based on data in an article by C. P. Tatterson, "The Effect of Physical Pretreatment on the Ease of Saponification of Cellulose Acetate Material." (*Journal of the Society of Dyers and Colourists,* Jan. 1950). It is said that a cut may be distinguished from a rupture, and the author reports several uses for the Tatterson data. For example, strained or roughly handled acetate yarns may dye unevenly when the procedure requires scouring followed by cross-dyeing with direct colors or with vat colors. But upon treatment with a 30 percent salt solution at 90° C. for ten minutes, the tendency of the yarn to preferentially saponify was eliminated, despite the fact that the strain or defect remained in the yarn.

Water-proofing fabric. John B. Rust & Wm. B. Canfield (to Montclair Research Corp. & Ellis-Foster Co.) USP 2 524 022, Sept. 26, 1950.

A composition for rendering fabrics water-repellent comprising an emulsion containing an ammonium salt of a copolymer of maleic anhydride and styrene, having stearylamine and a wax dispersed therein.

Water repellent fabrics and composition and process for making same. John B. Rust & Wm. B. Canfield (½ to Montclair Research Corp.). USP 2 524 022, Sept. 26, 1950.

A composition particularly adapted for rendering fabrics water-repellent when the fabrics are impregnated therewith and heated, comprising an emulsion containing, as the dispersing phase, an aqueous solution of a salt of a volatile base and a linear polymeric polycarboxylic acid and, as the disperse phase, a wax and an aliphatic hydrocarbon primary amine containing from 10 to 22 C atoms, the amount of amine being from 0.15 to 0.95 mole per carboxyl group and the amount of wax being from 1 to 4 parts per 1 part of the polymeric acid and the amine combined.

"Zeset" S. *The DuPont Technical Bull. 6,* 134-45 (Sept. 1950).

"Zeset" S is a new product designed for producing crease-resisting and shrink-resisting fabrics composed principally of cellulose fibers. Excellent durability, softness of hand, and ease of application are outstanding features of the new finish. "Zeset" S may be used alone, or combined with softening or stiffening agents to modify the hand. It also may be used along with Zelan durable water repellent to produce fabrics that are durably crease-resistant, shrink-resistant and water-repellent. Thus, its introduction makes possible the production of finished fabrics possessing new and desirable effects. For example, combination treatments of "Zeset" and Zelan are employed on viscose-process rayon to impart the hydrophobic properties and the resiliency associated with wool.

TESTING AND MEASUREMENT G

Clothing and fabrics G 1

Accelerated washfastness test. Anon. *Am. Dyestuff Reptr. 39,* P657-8 (Oct. 2, 1950).

The color destruction and abrasive action of five average commercial or home launderings are approximated in one 45-minute test, as a result of the new AATCC tentative wash test. Comparative test data on the present AATCC #3 wash

test show that twenty-two of these tests are necessary to produce a result comparable with 10 average commercial or home launderings. The Launder-Ometer has been greatly strengthened and modified in order to accelerate the test routine, the complete details of which, known as "Accelerated Washfastness Test No. 3A", are reprinted.

Cotton shrinkage. E. C. Pfeffo. *A. S. T. M. Bull. 167*, 86-7 (July 1950).

Discusses the mechanism of shrinkage in woven cotton fabrics, with reference to relaxation shrinkage and crimp. Equations are given to illustrate shrinkage, and results of a series of tests which indicate that cotton fabrics shrink almost entirely due to crimp change and not to yarn shrinkage are discussed.

Development of a reproducible testing technique using the taber abraser on rayon fabrics. Margaret H. Zook. *Amer. Dyestuff Reptr. 39.*

An investigation directed toward the standardization of the method of use of the taber abraser. Control of the abrader, procedure for testing the experimental fabrics and control charts data are included.

New-type shrink standard test suggested. *Daily News Record* (Oct. 6, 1950).

Details given of "The Strip Tester", proposed as a new instrument for measuring dimensional change in woven fabrics. Claim high degree of reproducibility of results but not accurate laboratory predictability of performance in use.

Some recent developments in the testing of textiles. J. Lomax. *Textile Recorder 68*, 83-4 (Oct. 1950).

A review of changes in textile testing the past fourteen years describes the work of the British Unification of Testing Methods Committee, the importance of comparisons in textile testing, the terminology of twist, the use of Cambridge extensometer for strength testing of fine yarns and the Denison tester for cords and fabrics.

Some physical-chemical aspects of cotton detergency. Jos. M. Lambert & Herbert L. Sanders. *Ind. & Eng. Chem. 42*, 1388-94 (July 1950).

A review of the conventional testing methods has been made which showed that the present tests fail in many respects to simulate adequately actual use conditions. It is pointed out that in practice cotton is soiled by complex mixtures rather than by large amounts of finely divided carbon black. Moreover, the nonlinear relationship between the reflectance and the amount of soil on the fabric indicates that even trace quantities of ingrained soil can reduce appreciably the whiteness of textiles. Also, cotton goods are normally soiled and laundered repeatedly throughout their lifetime in contrast to conventional laboratory wash tests which employ only a single cycle with unused cotton. Preliminary results are described which were obtained with several cotton detergents in multicycle wash tests in which roll towels were soiled in actual use, then washed in a home washing machine and measured in the laboratory.

Table on proposed rayon standards issued. Anon. *Daily News Record*, 28 (Sept. 12, 1950).

American Standards Assoc. has issued a tabular summary of the proposed end-use under ASA procedure for the approval of the industry, retail and other interested groups. The tabulation presented shows the required breaking strength, bursting strength, and resistance to yarn slippage in pounds, as specified for finished rayon fabrics for the various end-uses. It gives shrinkage loss and other characteristics in percentage figures and colorfastness to various influences by class of colorfastness required for that end-use under standard tests.

Textile compilation now available. Anon. *ASTM Bull. 169*, 15 (Oct. 1950).

Containing all the standards on textile materials and related information on photomicrographs of fibers, a yarn number conversion table, humidity table, three technical papers on stress-strain problems and committee data, the new compilation of ASTM Standards on Textile Materials covers most of the widely used products of this industry.

The current revision of this compilation continues to provide testing methods, acceptable tolerances, and specification requirements on quality. This 1950 edition will provide conveniently all the data and information believed to be of importance to those who deal with textile materials.

An important part of the compilation is the glossary of textile terms and terms related to hand of fabrics.

Many general standards are included on such things as snag resistance, fire-retardant properties, air permeability, interlaboratory testing, insect pest damage resistance of pile floor coverings, water resistance, microorganism resistance, and light fastness. There are also many standards on cotton, rayon and silk, hosiery, and wool.

The 600-page (84 standards) compilation devel-

oped by Committee D-13 on Textile Materials and containing a detailed index is $4.50. ASTM members can buy the compilation for the special price of $3.40.

TEXTILE MILLS H

A year of new equipment for the textile industry. Anon. *Textile World* 110-46 (Nov. 1950).

An annual review of new machinery, supplies, and equipment, excluding machinery introduced at the American Textile Machinery Exhibition in Atlantic City during May, 1950.

AATCC annual meeting. Anon. *Textile Industries 114,* 98-103 (Nov. 1950).

Abstracts of several of the technical papers delivered at the annual convention of the American Association of Textile Chemists and Colorists are given. Included in the abstracts are the following; "Mothproofing-Detergent Combinations" by H. C. Borghetty, W. N. Pardey & O. L. Sherburne; "The Printing of Synthetics—Trends and Mill Problems" by Arthur F. McLean; "Control of the Caustic Silicate Ratio in Peroxide Bleaching Liquors" by K. D. Ballou, J. J. Roarke & G. M. Gantz; "The Worsted Mill Laboratory" by Carl E. Medde & Palmer E. Morally; "The Relation Between Fiber Properties and the Apparent Abrasion Resistance of Resin-Modified Fabrics" by D. D. Gagliardi, Angela Lempka & A. C. Neussle; "Package Dyeing" by Ernest L. Caswell; "Studies with Titanium as an Agent for Imparting Durable Fire Retardancy to Fabrics" by A. E. Jacobsen, W. F. Sulliven & I. M. Panik; "The Printing of Soil Cloth" by Carl Z. Draves & Opal L. Sherburne; and "The Water Pollution Problem" by Lyman Cox.

Aberfoyle opens new plant at Bridgeton. Anon. *Textile Age 14,* 32-3 (Oct. 1950).

Features of the new processing plant at Bridgeton, N. J. of the Aberfoyle Manufacturing Co. are described. The plant is equipped for package dyeing, warp and skein dyeing, and bleaching and gassing.

Air conditioning the textile plant. F. Honerkamp. *Textile Age 14,* 42-5 (Oct. 1950).

By complete air conditioning of textile plants, optimum conditions for best workability of the fibers and highest efficiency of personnel may be obtained. An installation that really conditions the air must control temperature, humidity, and air diffusion. Five factors on which satisfaction of an air conditioning system depends are discussed. These include: accurate analysis of the job, proper methods, adequate capacity, correct distribution system, and efficient air diffusion.

Atomic energy and textiles (an editorial). *Brit. Rayon & Silk Journal 27,* 39 (Aug. 1950). See front section.

Blends constitute fire hazard. Anon. *Textile Industries 114,* 77 (Nov. 1950).

Casualty underwriters say that mills not specifically designed for blend handling may pose a serious fire threat. Large bins as used in wool mills, they say, hold huge quantities of highly inflammable synthetic fiber. Sprinklers are not the answer, and unsafe floor loads may be created by water absorption blended fibers in case of sprinkler operation. Upward revision of insurance rates may be imminent.

Cost of cotton and labor. Anon. *Daily News Record 222,* 31 (Nov. 14, 1950). See front section.

Efficient power transmission vital to production costs. Anon. *Rayon & Syn. Tex. 31,* RE-G (Nov. 1950).

Correct power drives are vitally important to successful mill operation, but the starting point for obtaining real power economy is in the bearings of power-transmission equipment, either the ball or roller type being preferred. Anti-friction bearings, on power transmission equipment and machines, produce a 25-30 percent power saving over plain bearings. Practical suggestions are outlined for bearing installation, motor and motor controls, drive selection, and power losses.

Efficient rayon mill designing. J. Robt. Potter. *Am. Wool Cotton Reptr. 64,* 57, 59, 61 (Oct. 12, 1950).

Efficient designing in rayon yarn buildings and equipment as illustrated in Beaunit's Coosa Pines rayon pot spinning plant is discussed. The mechanical and electrical services of the plant as well as broad aspects of its design are described.

Fire hazards in electrical systems. Anon. *Industry & Power 59,* 83-5 (Oct. 1950).
dustry & Power 59, 83-5 (Oct. 1950). See front section.

Get the most for your money by cordwood piling of cotton bales. Anon. *Modern Materials Handling 5,* 34-5 (Sept. 1950).

See Front Section.

Increasing textile output. Importance of human factor stressed. V. G. Karnik. *Indian Tex. J. 60,* 864-867 (Aug. 1950).

Cites the importance of industrial relations in increasing production. Makes concrete suggestions for improving the relations between (1) the workers themselves, (2) the workers and their supervisors and (3) the workers as a group and management.

Insulation survey for a textile mill. Marshall F. Allen. *Textile Age 14*, 74-5 (Oct. 1950).

Savings in steam costs in textile mills can often be effected by improving insulation in the mill. A survey of all heated lines and equipment is necessary to determine what corrective steps are needed. An outline is presented to aid in making such a survey and in planning work to correct faults encountered.

Manufacturing controls. Rudolph Ashner, Werner Textile Consultants & P.O.M. Company. *Am. Wool Cotton Reptr. 64*, 21, 23-4 (Oct. 12, 1950).

The use of a centralized over-all mill control system will result in increased efficiency, major savings, higher quality, and improved personnel relationship. The 5-point installation procedure for an over-all mill control system includes: (1) all standards and tolerances which will affect the quality of the product and the cost of operation must be established and recorded; (2) a control and testing program, including checking and testing frequencies, has to be worked out; (3) forms for control records must be designed; (4) administrative routines within the control department must be clearly defined; and (5) exact testing and checking procedures have to be introduced.

Modernizing old mill lighting systems. James T. Meador. *Textile Bull. 76*, 75-6, 78 (Oct. 1950).

Lighting modernization can be based upon a complete use of present mill systems. Main feeders to transformers, such as 220 and 550-volt lines, can be retained. Low-voltage feeders (110-220 volts) to distribution panels, branch circuits, and outlets may also be used. The main difference is the use of flourescent fixtures, as opposed to incandescent ones. Between long-spacing outlets, the newest type of flourescent fixture produces 2½ times the light of the incandescent of equal wattage. These fixtures are called double-75-watt, 425 milliamp, instant-start types. They are 8 feet long and without starters. Another size and type of flourescent fixture has given good light output, low maintenance, and low lamp and starter replacement. It is described as a double-tube, 85-watt-per-tube fixture, five feet long and containing a total of 200 watts. Its starters are

larger and heavier than the usual starters, a factor said to permit more satisfactory service. The tubes are larger, being 2⅛ by 60 inches; and in comparison with 40-watt tubes, the mill would use only one-half as many of the five-foot, 2⅛ inch tubes.

New ideas for mill men abound at Southern Textile Exposition. Anon. *Textile World*, 147, 149, 151, 153, 155, 157, 159, 161, 163, 165, 167, 169, 236 (Nov. 1950).

A review of new machinery and equipment shown at the Southern Textile Exposition, Greenville, S. C.

Outdated cotton mill. H. M. Rogers, Jr. *Am. Wool Cotton Reptr. 64*, 63, 65, 67-8 (Oct. 12, 1950).

The altering and modernization of an out-dated cotton mill is described, covering the program of alterations to the existing structures, addition of mechanical features and rerouting the course of a stream which interfered with the logical expansion of the plant. The Stonewall, Miss., plant of Erwin Mills, Inc., work on which was begun in 1948 and is now nearing completion, is used as an illustration.

Over-all mill controls. Give your mill operations flexibility in these fast-changing times. Rudolph Ashner. *Rayon & Syn. Tex. 31*, 45-8, 50 (Nov. 1950).

The concern of mill executives now is shifted to problems involving the securing of raw materials allocation of production, costs, and the familiar wartime worry of manpower. This shift requires management flexibility and the exercise of complete control over any aspect of mill operations so that products, costs, methods, manpower utilization, raw material and all other factors may be changed as necessity demands.

No centralized control can be installed without establishing standards for all processes, products, and productivities. Waste standards, for example, depend upon quality standards. Maintenance standards also depend upon what quality standards and working methods are desired. In practice, however, some mills permit decentralization of controls, allowing one group of people to look after sizings, another after waste, and another controlling maintenance, etc.

There are four main objections to decentralization of controls: (1) it is a waste of labor; (2) unreliable results are produced; (3) the relation of unsatisfactory conditions to the proper cause is obsured; (4) application of remedies is obstructed. Centralized control in one single agency

is recommended; sample control charts for maintenance are illustrated.

Plant protection—in case of war. Anon. *Textile Industries 114,* 83 (Nov. 1950). See front section.

Portable turntable handles heavy rolls or drums. Anon. *Modern Materials Handling 5,* 53 (Sept. 1950). See front section.

Purification of textile sewage. H. Jung & W. Schrroder. *Textil Praxis 5,* 534 (1950).

A detailed discussion of the "Niers" process for purifying textile sewage wherein the impurities are flocculated by means of iron salts. Iron filings are added from which the salt is formed during the purification operation of a plant using this process is automatic and easily maintaned.

Revolution in pallet design. Anon. *Modern Materals Handling 5,* 36 (Sept. 1950). See front section.

Second Canadian Textile Seminar. Anon. *Textile Industries 114,* 94-7 (Nov. 1950).

Abstracts and extracts from a number of the papers delivered at the Second Canadian Textile Seminar are presented. These include: "Processing and Blending Staple Fibers on the Worsted System" by H. Ashton; "Knitter Training on Single Head, Single linit Full-Fashioned Hosiery Machines" by Fred D. Allan; "Tension Affects Quality Winding" by E. W. Schmiedel; "Handling Warp Knitted Fabrics Before Dyeing" by T. H. Hilliard; and "Mill Supervision as it Affects the Employee" by R. H. Perowne.

Simple check for radioactivity developed by Army Signal Corps for individual's use. Department of Defense Release No. 1403-50 (Nov. 15, 1950).

See Front Section.

Southern Textile Exposition. Anon. *Am. Wool Cotton Reptr. 64,* 16, 69-71 (Oct. 12, 1950).

Features of the Southern Textile Exposition held in Greenville, S. C., and the various types of equipment exhibited are discussed briefly.

Tailored air conditioning. Temperamental nylon behaves itself when air distribution is under control. H. L. Kempaner. *Rayon & Syn. Tex. 31,* 37-9, 55 (Nov. 1950).

Description of Sapphire Hosiery Mills new full-fashioned mill, in which accoustical ceilings, absence of floor columns, long-space roof trusses, and refrigerated air-conditioning are interesting features.

The Exhibits reviewed. Anon. *Textile Recorder 68,* 149-80, 191-2 (Oct. 1950).

The Textile Recorder International Exhibition of Knitting Machinery and Accessories.

Vibration control in looms. Jas. E. Doyle. *Am. Wool Cotton Reptr. 64,* 11-12, 31 (Oct. 26, 1950).

In this second of two articles on vibration control in looms; a new method is discussed of using steel, properly placed and of such design as to achieve counter-balance to all movements when in operation, for eliminating vibration. The steel should not add more than 2½ pounds per square foot to the weight load on the building and its elements must contain a state of immovability at the floor in conjunction with an elastic reactor of value close to impact values in the horizontal-traverse and longitudinal-vertical directions.

11th Modern equipment and processing review. *Textile Industries 114,* 104-33, 135, 137, 139, 141, 143, 145, 147, 150, 153, 155, 157, 159, 161, 163, 165, 167, 169, 171, 173, 175, 177, 179, 181, 183-4, 187, 189, 191, 193, 195, 197, 201, 203, 205, 207, 209, 211-13 (Nov. 1950).

A review of equipment and accessories made available or improved or announced since October 1949 is presented. Information on the equipment, etc., was supplied by cooperating companies.

29th AATCC convention tops all others in program features. Anon. *Am. Wool Cotton Reptr. 64,* 13-14, 33 (Oct. 12, 1950).

Highlights of the 29th AATCC convention, including abstracts of some of the speeches and papers presented, and notes on some of the exhibits are given.

CHEMISTRY AND PHYSICS OF TEXTILE MATERIALS I

Chemical nature of degenerated rayons. Ch. Pinte & P. Rochas. *Bull. de l'Institut de France 21,* 9-60 (Oct. 1950).

The writers have studied the behavior of various chemical processes present in degenerated celluloses under the influence of a certain number of reagents, to wit, para-sulphonated phenylhydrazine, calcium acetate, hydroxylamine.

The reactions to parasulphonated phenylhydrazine enabled them to draw a definite distinction between the reducing groups of the hydrocelluloses and oxycelluloses and, among the latter, between aldehyde and ketonic processes.

Chemicals you live by in the textile industry. L.

P. Seyb. *Rayon & Syn. Tex. 31*, 75, 77-8, 82 (Nov. 1950).

Most commonly used chemicals are described, such as those for wool scouring and bleaching; silk degumming, bleaching, and weighting; linen bleaching; and synthetic-fiber manufacture.

Microwave techniques for the measurement of the dielectric constant of fibers and films of high polymers. T. M. Shaw & J. J. Windle. *J. of Applied Physics 21*, 956-61 (Oct. 1950).

A resonant cavity method is described for the determination of dielectric constant of polymeric solids in the form of fibers, films, and thin cylinders. Methods for investigating electrical anisotropy are outlined. In the case of fibers, for the electric field parallel to the fiber axis, the dielectric constant is determined directly. For the electric field perpendicular to the fiber axis, the problem arises of calculating the dielectric constant of the fiber from that of an air-fiber mixture. For the latter purpose the Lichtenecker equation was found to be applicable. Illustrative measurements of the dielectric constant of wool, nylon and cellophane are presented and discussed briefly.

TEXTILE EDUCATION AND RESEARCH J

A colorimetric method for water-soluble silicates in detergents. Wm. J. Miller. *J. of Am. Oil Chem. Soc. 27*, 348-50 (Sept. 1950).

A rapid, fairly accurate control method for the analysis of all types of detergents, even those highly built with phosphates. When an appreciable amount of water-insoluble silicate is present, the method may be modified to include a determination of this material. It is based on the development of the yellow silico-molybdic complex. Tabular and graphical data are presented.

Bacterial damage to textiles and the parasites responsible. M. Nopitsch. *Melliand Textilber 31*, 619-27 (Sept. 1950); *in German.*

This article discusses the cause of bacterial damage to textiles and the parasites responsible, at the same time indicating the methods of applying finishes to wool which have a bactericidal effect or at least stop their growth. Reference is also made to finishing methods which lower the resistance of wool to bacterial attack. Besides mentioning familiar methods, the author also describes the results of trials of several new processes which he has worked out, whereby he was guided by a more extensive clarification of the problem of the relations between textiles and bacteria, both of a saprophytic as well as a pathogenic nature.

Bound water and hydration. Alfred J. Stamm. *Tappi 3*, 435-39 (Sept. 1950).

The mechanism of the binding of water by cellulose and the effect of water on fiber-to-fiber bonding are discussed.

Controlled fractionation of cellulose acetate. P. C. Scherer & R. B. Thompson. *Rayon & Syn. Tex. 31*, 51, 52, 54 (Oct. 1950).

The values for the weight percent of fraction obtained under the controlled fractionation procedure for three separate runs show that the fraction weights can be reproduced with a maximum deviation from the mean of less than 0.5%. It is shown that the degree of polymerization of the fraction obtained in separate runs also show a deviation from the mean well within the experimental error. A satisfactory procedure has been worked out for the controlled fractionation of a cellulose acetate having the characteristics described above. Evidence has accumulated in the laboratories here that a change in the degree of substitution, or a change in the average degree of polymerization of the acetate used will entail some change in the fractionation procedure.

Heterogeneous methanolysis of native and mercerized cotton cellulose. R. E. Reeves, L. W. Mazzeno, Jr., & C. L. Hoffpauir. *J. Amer. Chem. Soc. 72*, 4773-77 (Oct. 1950).

The methanolysis of cotton cellulose produces two measurable results: introduction of acid-labile methoxyl groups into the insoluble phase, and dissolution of a portion of the cellulosic material into the methanolysis reagent. When the total reaction is considered it is found that the rate of methanolysis smoothly decreases in the region where 0.1 to 5% of the glucose units have undergone reaction. Throughout this investigated region the temperature coefficient for native cotton cellulose remained constant; for mercerized, a lower, essentially constant value was observed. It appears that the rate controlling step in methanolysis involves in a single step the rupture of secondary as well as primary valence forces. Incompatible with either the concept of reaction in an amorphous region or with relatively few acid-sensitive linkages, the present date is explicable in terms of reaction with an initially large crystalline surface, diminishing strongly as the surface is reduced by the coalescence of crystalline areas when internal tensions relax due to reaction within the fiber.

Investigation on the differences between physical

properties of skin and core in viscose rayon. P. H. Hermans. *Textile Res. J. 20,* 553-69 (Aug. 1950).

Detailed instructions are given for carrying out Elod's method for peeling-off cellulose fibers by acid-catalyzed topochemical acetylation in an indifferent solvent and subsequent removal of the acetylated shell by dissolution. The results of its application in an investigation on the radial gradient of physical properties of a tire-cord rayon and 3 textile rayons are presented. In addition, orientation and crystallinity as deduced from x-ray exposures were investigated.

Measurement and significance of swelling of cellulose fibers. Wilfred Gallay. *Tappi 33,* 425-29 (Sept. 1950).

Methods of measurement of the swelling of cellulose fibers in water are reviewed and the results compared in a general way. Swelling of cellulose in water is related to swelling of high polymers in general, and factors affecting such swelling are considered. The significance of swelling of cellulose fibers in pulp preparation and paper properties is discussed. The need for further research on methods of measurement of the swelling of cellulose fibers is emtphasized.

Mechanical properties of high polymers as functions of the shape of the distribution curve. V-controlled fractionation of cellulose acetate. Philip C. Scherer & R. B. Thompson. *Rayon & Syn. Tex. 31,* 51-2, 54 (Oct. 1950).

The article reports that a satisfactory procedure has been worked out for controlled fractionation of a cellulose acetate of specific characteristics, and that a change in degree of polymerization will entail some change in the fractionation procedure.

Methods of determining the water vapour permeabilitiy of laminae. Review of the literature. A. C. Newns. (Brit. Cotton Industry Res. Assoc.) *J. Tex. Inst. 41,* T269-T308 (Aug. 1950).

Experimental methods that have been used for investigating the diffusion of water vapor through laminar materials are reviewed. Brief descriptions of the principal types of apparatus are given together with an outline of the analysis used in the calculation of the results and the main sources of error inherent in these investigations.

New developments in textiles. Edward R. Schwarz. *J. Home Econ. 42,* 518-20 (Sept. 1950).

Important advantages will be obtained from research results on natural and man-made fibers now in use and from methods by which they may best be combined in blends, as well as from new fibers and finishes. One-fiber mills are disappearing. The fabric designer is interested in how fbers of one kind behave in combination with other fbers. Research continues in the theory that what makes certain fabrics better than others for specific uses may be the inter-fiber and inter-yarn voids. The geometric structure of yarns, research on end-use of products, and more precise statistical methods of analysis are other subjects in which improvement may be made.

Non-woven fabrics. (American Cyanamid Co.) Brit. P. 637 227.

A water-insoluble coating agent containing essentially a wax, a bitumen, a gum, a resin, an elastomer, or a thermoplastic or thermosetting synthetic resin, e.g., polystyrene, is applied to cellulosic fibers by suspending them in water, adding an aqueous dispersion of the deflocculated coating agent, and flocculating it in the presence of the fibers by the action of a colloidal dispersion of cationic melaminealdehyde resin in sufficient quantity to provide at least 5% by weight of coating agent, based on the weight of fibers, for uniform dispersion thereon along the resin. Felted fibrous cellulosic material is made from the coated fibers, the water draining from them depositing the flocculated but unabsorbed coating agent in the felted product.

Non-woven fabrics. Fred W. Manning. USP 2 522 526-7, Sept. 19, 1950.

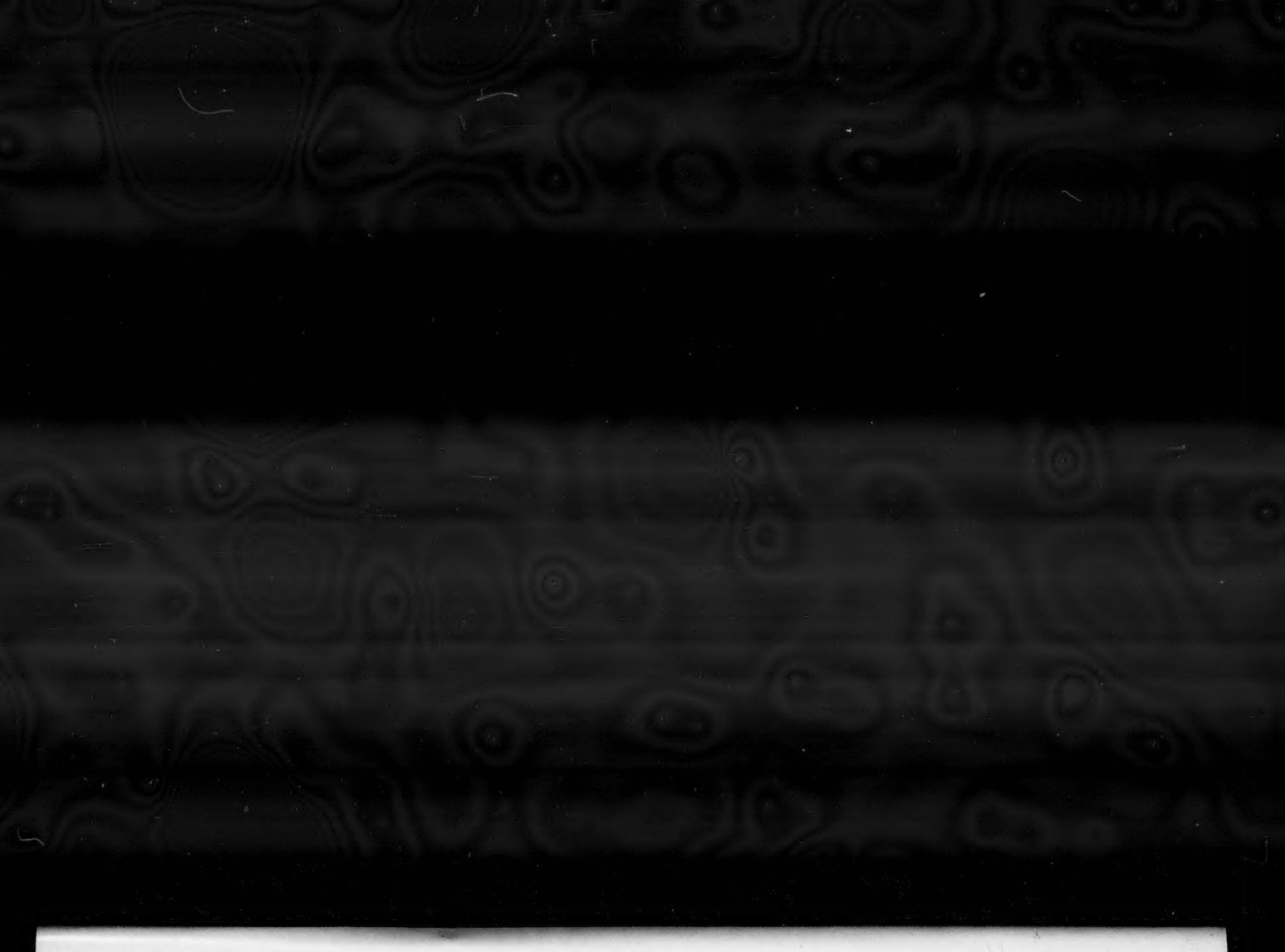
A spray gun is suggested for the production of non-woven fabrics from thermoplastic filaments.

Non-woven textile material. James H. MacGregor & Frank Happey (to Courtaulds Ltd.) USP 2 522 627, Sept. 19, 1950.

A non-woven textile material comprising non-etherified cellulose fibers coated with cyanoethyl cellulose serving to bond the fibers.

Parallel-fiber material. J. E. Gordon & C. G. Evans. Brit. P. 636 237.

Material containing substantially parallel fibers is prepared by impregnating a fibrous yarn, the twist of which maintains the fibers parallel, with liquid adhesive, and untwisting, when the parallel relationship is maintained by the adhesive. Using a partly condensed synthetic resin a multiplicity of yarns may be so treated, untwisted, laid together, and formed by curing into a laminated reinforced sheet.



TEXTILE TECHNOLOGY DIGEST PATENT INDEX

Volume 7, Numbers 1-12, January to December 1950

UNITED STATES PATENTS	Col. No.
2 250 135	886
2 250 597	884
2 251 340	969
2 471 261	55
2 472 790	276
2 473 520	617,878
2 475 626	571
2 480 645	26
2 480 775	562
2 480 894	32
2 481 002	6
2 481 425	26
2 481 538	8
2 481 632	32
2 481 681	12
2 482 155	19
2 482 702	10
2 482 917	57
2 482 931	50
2 483 160	13
2 483 404	39
2 483 405	17
2 483 406	39
2 483 455	17
2 483 541	33
2 483 861	40
2 484 756	38
2 484 810	11
2 484 962	52
2 485 004	808
2 485 072	43
2 485 093	11
2 485 134	797
2 485 136	51
2 485 153	17
2 485 163	816
2 485 230	34
2 485 250	59
2 485 289	824
2 485 307	38
2 485 327	56
2 485 330	54
2 485 382	14
2 485 414	20
2 485 533	459
2 485 553	3
2 485 603	54
2 485 705	70
2 485 710	43
2 485 725	36
2 485 746	30
2 485 747	29
2 485 776	269
2 485 917	28
2 485 959	182
2 486 009	22
2 486 031	16
2 486 179	34
2 486 349	15
2 486 399	56
2 486 525	34
2 486 720	361
2 486 730	14
2 486 803	35
2 486 804	52
2 486 805	36
2 486 806	36
2 486 885	25
2 486 919	40
2 486 942	40
2 486 961	51
2 486 963	37
2 486 997	23
2 487 148	22
2 487 197	49
2 487 361	13
2 487 450	23
2 487 492	18
2 487 544	8
2 487 764	31
2 487 780	23
2 487 837	13
2 487 838	15
2 487 943	32
2 488 004	37
2 488 025	24
2 488 034	53
2 488 133	33
2 488 148	23
2 488 158	26
2 488 192	25
2 488 204	44
2 488 208	45
2 488 311	268
2 488 346	29
2 488 397	49
2 488 442	5
2 488 544	48
2 488 587	57
2 488 588	59
2 488 614	33
2 488 722	71
2 488 761	64
2 488 764	8
2 488 852	16
2 488 879	11
2 488 950	22
2 488 970	12
2 488 971	12
2 489 021	9
2 489 141	29
2 489 231	24
2 489 252	41
2 489 275	130
2 489 377	70
2 489 465	44
2 489 466	37
2 489 473	58
2 489 513	125
2 489 537	46
2 489 557	24
2 489 609	34
2 489 658	30
2 489 791	39
2 489 846	125
2 489 849	108
2 489 973	196
2 489 978	194
2 489 979	21

2 489 985 230
2 490 041 108
2 490 042 124
2 490 134 159
2 490 301 109
2 490 402 284
2 490 403 110
2 490 417 476
2 490 436 111
2 490 524 93
2 490 544 89
2 490 589 128
2 490 803 179
2 490 874 93
2 490 929 87
2 490 936 202
2 490 938 82
2 491 083 109
2 491 092 105
2 491 110 614
2 491 142 110
2 491 173 118
2 491 249 151,232
2 491 258 125
2 491 292 124
2 491 322 89
2 491 323 90
2 491 388 195
2 491 396 124
2 491 438 100,188
2 491 439 188
2 491 454 146
2 491 569 93
2 491 584 148
2 491 639 158
2 491 740 100
2 491 909 109
2 491 916 110
2 491 917 104
2 491 941 103
2 491 967 175
2 491 970 120
2 492 002 174
2 492 008 200
2 492 051 129
2 492 082 180
2 492 091 180
2 492 158 159
2 492 285 207
2 492 306 87
2 492 394 259
2 492 412 183
2 492 514 193
2 492 552 187
2 492 553 190
2 492 574 220
2 492 581 96
2 492 670 213
2 492 689 215
2 492 711 214
2 492 737 132
2 492 741 130
2 492 754 217
2 492 778 95
2 492 811 211
2 492 974 218
2 493 031 99
2 493 054 206
2 493 104 198
2 493 114 112
2 493 151 111
2 493 253 380
2 493 259 185
2 493 359 356
2 493 360 146
2 493 381 147
2 493 515 365
2 493 557 202
2 493 568 269
2 493 570 190
2 493 611 111
2 493 631 457
2 493 634 368
2 493 675 122
2 493 765 229
2 493 803 204
2 493 821 197
2 493 830 204
2 493 836 156
2 493 863 181
2 493 876 209
2 493 902 189
2 493 905 201
2 493 910 203
2 493 944 174
2 494 123 198
2 494 174 208
2 494 378 220
2 494 389 187
2 494 490 186
2 494 646 215
2 494 649 728
2 494 731 380
2 494 807 217
2 494 808 298
2 494 913 198
2 494 927 200
2 494 976 199
2 494 983 213
2 495 053 185
2 495 054 283
2 495 058 181
2 495 067 209
2 495 163 219
2 495 198 192
2 495 205 351
2 495 300 178
2 495 501 194
2 495 503 194
2 495 543 205
2 495 666 213
2 495 761 217
2 495 767 172
2 495 803 195
2 495 808 213
2 495 810 222
2 495 825 201
2 495 845 624
2 495 847 211
2 495 872 201
2 495 893 210
2 495 926 210
2 496 038 200
2 496 168 178
2 496 204 468
2 496 368 196
2 496 386 225
2 496 464 179
2 496 475 219
2 496 628 193
2 496 631 174
2 496 722 196
2 496 765 182
2 496 776 186
2 496 797 215
2 496 844 199
2 497 017 351
2 497 077 377
2 497 117 294
2 497 120 191
2 497 267 359
2 497 281 285
2 497 330 291
2 497 454 275

2 497 511	347	2 499 774	398	2 503 099	787
2 497 519	227	2 499 787	392	2 503 221	462
2 497 560	187	2 499 810	366	2 503 237	447
2 497 574	256	2 499 888	359	2 503 242	443
2 497 604	236	2 499 987	402	2 503 300	483
2 497 613	200	2 499 989	356	2 503 444	467
2 497 647	176			2 503 524	477
2 497 711	199	2 500 025	602	2 503 583	475
2 497 716	211	2 500 029	345	2 503 629	500
2 497 796	272	2 500 116	357	2 503 633	472
2 497 834	183	2 500 282	377	2 503 705	482
2 497 865	353	2 500 332	362	2 503 711	455
2 497 866	355	2 500 337	372	2 503 779	534
2 497 881	355	2 500 343	352	2 503 817	478
2 497 927	402	2 500 518	370	2 503 936	445
2 498 022	285	2 500 631	373	2 504 003	490
2 498 077	295	2 500 717	439	2 504 047	446
2 498 092	374	2 500 759	375	2 504 183	427
2 498 322	285	2 500 827	357	2 504 316	464
2 498 364	352	2 500 877	394	2 504 523	447
2 498 408	255	2 500 950	398	2 504 554	478
2 498 416	300	2 501 106	357	2 504 571	439
2 498 447	287	2 501 157	367	2 504 608	477
2 498 496	290	2 501 184	391	2 504 835	665
2 498 499	297	2 501 213	367	2 504 844	427
2 498 605	691	2 501 246	464	2 504 857	492
2 498 610	280	2 501 268	378	2 504 882	649
2 498 646	348	2 501 337	386	2 504 883	656
2 498 970	369	2 501 353	375	2 504 939	627
2 499 023	284	2 501 394	369	2 505 108	616
2 499 027	353	2 501 413	359	2 505 259	496
2 499 050	278	2 501 423	369	2 505 354	473
2 499 075	354	2 501 435	500	2 505 372	470
2 499 141	383	2 501 480	387	2 505 427	443
2 499 142	383	2 501 515	359	2 505 443	457
2 499 175	259	2 501 537	382	2 505 498	490
2 499 226	316	2 501 539	371	2 505 567	440
2 499 256	284	2 501 624	456	2 505 618	436
2 499 268	270	2 501 776	359	2 505 628	473
2 499 342	354	2 501 777	370	2 505 635	454
2 499 395	404	2 501 838	376	2 505 649	664
2 499 406	378	2 501 915	364	2 505 657	651
2 499 444	359	2 501 979	378	2 505 690	432
2 499 477	378	2 501 988	401	2 505 873	705
2 499 501	345	2 502 014	411	2 506 005	434
2 499 502	365	2 502 031	374	2 506 040	494
2 499 513	379	2 502 101	376	2 506 041	494
2 499 596	456	2 502 353	399	2 506 042	494
2 499 653	499	2 502 406	361	2 506 043	494
2 499 656	374	2 502 735	814	2 506 044	495
2 499 679	272	2 502 894	786	2 506 045	495
2 499 726	357	2 503 024	471	2 506 046	495

2 506 145 715
2 506 155 707
2 506 174 757
2 506 249 553
2 506 258 455
2 506 315 710
2 506 442 457
2 506 564 536
2 506 616 747
2 506 645 545
2 506 667 532
2 506 697 536
2 506 731 553
2 506 745 541
2 506 760 557
2 506 892 561
2 506 916 548
2 506 968 541
2 507 107 572
2 507 141 611
2 507 147 691
2 507 181 694
2 507 200 839
2 507 299 573
2 507 422 747
2 507 487 544
2 507 530 540
2 507 531 540
2 507 532 541
2 507 533 543
2 507 534 543
2 507 561 565
2 507 599 561
2 507 678 532
2 507 688 748
2 507 699 834
2 507 718 694
2 507 828 539
2 507 869 524
2 507 904 526
2 507 955 535
2 508 007 574
2 508 045 585
2 508 081 584
2 508 203 566
2 508 209 542
2 508 348 540
2 508 406 521
2 508 407 521
2 508 489 785
2 508 502 530
2 508 516 531
2 508 713 576
2 508 714 574
2 508 810 537
2 508 834 542
2 508 852 552
2 508 964 525
2 508 968 549
2 509 032 542
2 509 146 549
2 509 148 519
2 509 290 533
2 509 347 532
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AUSTRALIAN PATENTS

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BRITISH PATENTS

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CANADIAN PATENTS

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